



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

Virginia Title V Operating Permit

This permit is based upon the requirements of Title V of the Federal Clean Air Act and Chapter 80, Article 1 of the Commonwealth of Virginia Regulations for the Control and Abatement of Air Pollution. Until such time as this permit is reopened and revised, modified, revoked, terminated or expires, the permittee is authorized to operate in accordance with the terms and conditions contained herein. This permit is issued under the authority of Title 10.1, Chapter 13, §10.1-1322 of the Air Pollution Control Law of Virginia. This permit is issued consistent with the Administrative Process Act, and 9 VAC 5-80-50 through 9 VAC 5-80-300 of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution of the Commonwealth of Virginia.

Authorization to operate a Stationary Source of Air Pollution as described in this permit is hereby granted to:

Permittee Name:	Merck Sharp & Dohme Corporation (Elkton Plant)
Facility Name:	Merck Sharp & Dohme Corporation (Elkton Plant)
Facility Location:	4 miles South of Elkton on VA Route 340 Rockingham County, Virginia
Registration Number:	80524
Permit Number:	VRO80524

September 1, 2019

Effective Date

August 31, 2024

Expiration Date

A handwritten signature in blue ink, appearing to read "BK Jull", written over a horizontal line.

Deputy Regional Director, Valley Region

August 30, 2019

Signature Date

Table of Contents, 1 page

Permit Conditions 1 through 176

Attachment A – Units Exempt from Visible Emissions Monitoring

Attachment B – Insignificant Emissions Units

Attachment C – Stationary Reciprocating Internal Combustion Engine Groupings

Source Testing Report Format

Table of Contents

FACILITY INFORMATION	3
EMISSION UNITS	4
FACILITY WIDE CONDITIONS (PROJECT XL)	12
FACILITY WIDE CONDITIONS FOR HAZARDOUS AIR POLLUTANTS.....	36
POWERHOUSE EMISSION LIMITS	56
RECIPROCATING INTERNAL COMBUSTION ENGINES (RICE).....	61
GASOLINE DISPENSING FACILITIES.....	81
CHEMICAL MANUFACTURING	83
FACILITY-WIDE CONDITIONS FOR VISIBLE EMISSIONS.....	86
ADMINISTRATION OF PSD (PROJECT XL) PERMIT	89
INSIGNIFICANT EMISSION UNITS	99
COMPLIANCE WITH STATE AND FEDERAL REGULATIONS AND AIR PERMITS UNDER PSD (PROJECT XL) PERMIT	100
PERMIT SHIELD & INAPPLICABLE REQUIREMENTS	104
GENERAL CONDITIONS.....	106

Facility Information

Permittee

Merck Sharp & Dohme Corporation. (Elkton Plant)

2778 South East Side Highway

Elkton, Virginia 22827

Responsible Official

Mr. Jonathan (Jon) Gass

Associate Vice President / Plant Manager

Facility

Merck Sharp & Dohme Corporation (Elkton Plant)

4 miles South of Elkton on VA Route 340

Rockingham County, Virginia

Contact Person

Mr. Reg Tanner

Safety and Environmental Director

(540) 298-4161

Facility Description:

NAICS 325411 (formerly SIC 2833) – Medicinal Chemicals and Botanical Products

NAICS 325412 (formerly SIC 2834) – Pharmaceutical Preparation Manufacturing

Merck Sharp & Dohme Corporation (Elkton Plant) is involved in the manufacture of various pharmaceutical intermediates and products.

Emission Units

Equipment to be operated consists of:

Emission Unit ID	Emission Unit Description	Applicable Permit Date
B	Powerhouse: <ul style="list-style-type: none">- backup distillate oil-fired boiler (B-4)- natural gas-fired boilers (with distillate oil or propane backup) (B-7 & B-8)	2/10/1998 administratively modified 8/8/2001, modified 9/18/2006, and administratively modified 4/21/11
C	Internal Combustion Engines	2/10/1998 administratively modified 8/8/2001, modified 9/18/2006, and administratively modified 4/21/11
D	Production Process Units	2/10/1998 administratively modified 8/8/2001, modified 9/18/2006, and administratively modified 4/21/11
E	Sludge Dryer	2/10/1998 administratively modified 8/8/2001, modified 9/18/2006, and administratively modified 4/21/11

* This table is provided for informational purposes only, and is not an applicable requirement.

Equipment to be operated consists of *:

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Powerhouse (General Emission Unit Area B)							
B-4	B-4	Back-up Steam Boiler Fuel Oil (manufactured in 1971)	117.0 MMBtu/hr	-	-	-	2/10/1998 administratively modified 8/8/2001 modified 9/18/2006, administratively modified 4/21/11, and administratively modified 3/16/16
B-7	B-7	Babcock and Wilcox Boiler Natural Gas (manufactured in 1998)	146.5 MMBtu/hr	Coen QLN Low-NOx Burner	--	NOx	2/10/1998 administratively modified 8/8/2001 modified 9/18/2006, administratively modified 4/21/11, and administratively modified 3/16/16
		Babcock and Wilcox Boiler Fuel Oil or Propane (manufactured in 1998)	137.0 MMBtu/hr				
B-8	B-8	Babcock and Wilcox Boiler Natural Gas (manufactured in 1998)	146.5 MMBtu/hr	Coen QLN Low-NOx Burner	--	NOx	2/10/1998 administratively modified 8/8/2001

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
		Babcock and Wilcox Boiler Fuel Oil or Propane (manufactured in 1998)	137.0 MMBtu/hr				modified 9/18/2006, administratively modified 4/21/11, and administratively modified 3/16/16
Internal Combustion Engines (General Emission Unit Area C)							
CFP-1	CFP-1	Caterpillar – Model 3406TA Diesel (installed 1996)	575 HP	--	--	--	--
M6-1	M6-1	Cummins - Direct Drive Model 6BT-5.9 Diesel (installed 1986)	152 HP	--	--	--	--
M10-1	M10-1	Cummins - Direct Drive Model 6BT-5.9 Diesel (installed 1985)	152 HP	--	--	--	--
M7-1	M7-1	Cummins - Direct Drive Model N855P250 Diesel (installed 1971)	250 HP	--	--	--	--
B5-1	B5-1	Detroit Emergency Generator – Model 71237305 Diesel (installed 1977)	575 HP	--	--	--	--

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
PH-2	PH-2	Cummins – Model QSB4.5 Diesel (installed 8/21/2008)	110 HP	--	--	--	--
F5-1	F5-1	Onan Emergency Generator – Model LSG-8751-6005-A Propane (installed 1993)	106 HP	--	--	--	--
FP-1	FP-1	Clark-Detroit – Model DDFP-08FH Diesel (installed 1999)	575 HP	--	--	--	--
FP-2	FP-2	Clark-Detroit – Model DDFP-08FH Diesel (installed 1999)	575 HP	--	--	--	--
SI-1	SI-1	Onan – Model 45.0 EM-15R/11071J Propane (installed 1977)	85 HP	--	--	--	--
GH-1	GH-1	Onan – Model 200 DGFC-4956976 Diesel (installed 2001)	317 HP	--	--	--	--

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
GH-2(2)	GH-2(2)	Onan Model GNAC-5619101 (formerly MK-991 LPG Generator) Radio Power Emergency Generator (installed 2003)	21.5 HP	--	--	--	--
PH-1	PH-1	Detroit Diesel Corp – Model 8163 7416 Diesel (installed 1993)	1232 HP	Oxidation Catalyst	--	Carbon Monoxide (CO)	--
CNG-1	CNG-1	Cummins QSK60 G Natural Gas Model Year 2015 (Installed 2016)	1469 HP	--	--	--	--
CNG-2	CNG-2	Cummins QSK19 G Natural Gas Model Year 2013 (Installed 2016)	471 HP	--	--	--	--
IG-1	IG-1	Olympian G35LG2 Natural Gas Model Year 2015 (Installed 2015)	54 HP	--	--	--	--
CB-15	CB-15	Kubota Engine Family CKBXL02.2RCD, 2.2L; Installed 2017 (2012 Model Year)	32 HP	--	--	--	--
CB-17	CB-17	Kubota Engine Family CKBXL02.2RCD, 2.2L Installed 2017 (2012 Model Year)	32 HP	--	--	--	--

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
CB-21	CB-21	Kubota Engine Family CKBXL02.2RCD, 2.2L Installed 2018 (2012 Model Year)	32 HP	--	--	--	--
CB-22	CB-22	Kubota Engine Family CKBXL02.2RCD, 2.2L Installed 2018 (2012 Model Year)	32 HP	--	--	--	--
Sludge Dryer (General Emission Unit Area E)							
E-1	E-1	Sludge Dryer	--	Scrubber system	Scrubber VS-390	PM-10	2/10/1998 administratively modified 8/8/2001 modified 9/18/2006, administratively modified 4/21/11, and administratively modified 3/16/16
Production Process Units (General Emission Unit Area D)							
Central Solvent Recovery	Unit Ref. 41	Solvent recovery in support of pharmaceutical production processes	--	Scrubbers	SCR-1000	HAPs and VOCs	N/A
Cilastatin	Unit Ref. 72 / B-5H	Pharmaceutical production process equipment	--	N/A	N/A	N/A	N/A
Imipenem	Unit Ref. 73 / B-5H	Pharmaceutical production process equipment	--	N/A	N/A	N/A	N/A

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Sodium Bicarbonate	Unit Ref. 74 / B-5H	Pharmaceutical production process equipment	--	N/A	N/A	N/A	N/A
Primaxin for Recovery	Unit Ref. 75 / B-5H	Pharmaceutical production process equipment	--	N/A	N/A	N/A	N/A
MK-991	Unit Ref. 81	Pharmaceutical production process equipment	--	Scrubber	SCR-9050	HAPs and VOCs	N/A
Antibiotic Filling	Unit Ref. B-52	Pharmaceutical production process equipment	--	N/A	N/A	N/A	N/A
HPV	Unit Ref. 91	Pharmaceutical production process equipment	--	N/A	N/A	N/A	N/A
Alum	Unit Ref. 92	Pharmaceutical production process equipment	--	N/A	N/A	N/A	N/A
DSI	Unit Ref. 94	Pharmaceutical production process equipment	--	N/A	N/A	N/A	N/A
TA-120, TA-121	Unit Ref. F	Wastewater storage tanks	--	Tank Covers	TA-120 Cover, TA-121 Cover	HAPs and VOCs	N/A
G-1	Unit Ref. G-1	Gasoline Dispensing Tank	--	N/A	N/A	N/A	N/A

Emission Unit ID	Stack ID	Emission Unit Description	Size/Rated Capacity*	Pollution Control Device (PCD) Description	PCD ID	Pollutant Controlled	Applicable Permit Date
Misc. Sources	-	Support services for pharmaceutical production process equipment (such as: stationary internal combustion engines, fugitives, lab hoods, boilers, gasoline tanks, and materials used in maintenance, repair, and construction activities, etc.)	--	N/A	N/A	N/A	N/A

*This table is provided for informational purposes only, and is not an applicable requirement.

Facility Wide Conditions (Project XL)

1. **Limitations** – Site-wide Emissions Caps

- a. **Total Criteria Pollutant Emissions Cap:** The total criteria pollutant emissions cap (total emissions cap) is 1202 tons per year (TPY). The criteria pollutants included in the cap are the following: ozone (using volatile organic compounds (VOCs) as surrogate), sulfur dioxide (SO₂), particulate matter with aerodynamic diameter less than 10 microns (PM-10), carbon monoxide (CO), and oxides of nitrogen (NO_x).
- b. **SO₂ cap:** The SO₂ cap is 539 TPY.
- c. **PM-10 cap:** The PM-10 cap is 46 TPY.
- d. **NO_x cap:** The NO_x cap is 262 TPY.
- e. **Adjustments to the Site-wide Emissions Caps**

(1) Adjustments for criteria pollutant regulations

Prior to the compliance date of a criteria pollutant regulation, including New Source Performance Standards (40 CFR 60 and VA Air Regulations 9 VAC 5 Chapter 50, Part II, Article 5 (9 VAC 5-50-400 et seq.)), to which the site or a source at the site is newly subject, the permittee will either plan to implement the regulation as written by the compliance date, or adjust the site-wide emissions caps as follows:

- (a) The permittee shall determine the reduction in total actual emissions that would result from complying with the regulation on the compliance date. The total reduction will be based on the site's operations and production rate corresponding to the time period defined by the highest emission point (HEP) or another more appropriate emission rate, as agreed upon by the regulatory administering agency and the permittee.
- (b) Proposed adjustment of site-wide emissions caps: site-wide emissions caps will be proposed to be adjusted as follows:
 - (i) The SO₂ cap reduced by the reduction in total actual emissions of SO₂ that would result from complying with the new regulation.
 - (ii) The PM-10 cap reduced by the reduction in total actual emissions of PM-10 that would result from complying with the new regulation.
 - (iii) The NO_x cap reduced by the reduction in total actual emissions of NO_x that would result from complying with the new regulation.

- (iv) The total emissions cap reduced by the reduction in total actual emissions of CO or VOCs, as appropriate, that would result from complying with the new regulation.

(c) Approval of cap adjustment:

- (i) The permittee will submit the emissions reduction determination and rationale to the regulatory administering agency for review and approval on a date prior to the compliance date of the regulation which is no later than 120 days for new regulations, or no later than 90 days for existing regulations to which the site or a source at the site is newly subject. The permittee shall provide additional documentation of the reduction estimate in a timely manner if requested. If the permittee fails to comply with the requirements of this paragraph, the permittee shall comply with the regulation as written.
- (ii) The emissions reduction determination will be considered approved by the administering agency unless the permittee is notified in writing within 60 days of the initial notification provided in Condition 1.e(1)(c)(i).
- (iii) If the regulation is administered by EPA under a Federal Implementation Plan (CAA Section 110) or if it is an NSPS other than Subpart Kb (40 CFR 60.110b et seq.), the permittee shall implement the regulation as written by the compliance date if:
 - (a) EPA determines that compliance with the regulation instead of a cap adjustment is necessary for achieving the objectives of the regulation, and
 - (b) EPA notifies the permittee in writing within 60 days of the initial notification in Condition 1.e(1)(c)(i).

If the regulation is NSPS Subpart Kb, including associated provisions of Subpart A, this subparagraph would not apply.

- (iv) Except as provided in Condition 1.e(1)(c)(iii), if it does not agree with the permittee's estimate provided in 1.e(1)(c)(i), the administering agency shall provide an alternate reduction estimate based on the site's operations and production rate as described in 1.e(1)(a) and accepted emissions estimation methods described in Table I.

Table I. Calculation Techniques Used to Determine Site-Wide Emissions.

Emission Sources	Methods of Calculation				
	VOC	SO ₂	PM-10	NO _x	CO
Process Vents	1,2	2	2	2	2
Internal Combustion Sources	2,6,7	2,6,7	2,6,7	2,6,7	2,6,7
External Combustion Sources	2,6,9	2,6,9	2,6,9	2,6,8,9	2,6,9
Natural Gas-Fired Boilers	2,6,10	2,6,10	2,6,10	2,6,8,10	2,6,10
VOC Bulk Storage Tanks	1,2,6	2	2	2	2
Solvent Recovery	2,4	2	2	2	2
Equipment Leaks	2,3	2	2	2	2
Wastewater Treatment	2,5	2	2	2	2

Key to Methods of Calculation:

1. 1978 Control Techniques Guideline (CTG), EPA; 1994 Alternative Control Techniques (ACT), EPA
2. Engineering Calculations
3. Site – Specific Emission Factors based on site-generated monitoring data approved for use by the DEQ
4. B-JAC Condenser Model
5. Toxchem Model, approved for use by the EPA
6. EPA AP-42 5th Edition, most current update as per Condition 6.c(2)
7. Vendor Emission Data
8. Actual NO_x data from CEMs or PEMs
9. Available stack test data from comparable sources
10. Stack test performed on unit

- (v) Except as provided in Condition 1.e(1)(c)(iii), the parties will seek agreement on the reduction estimate that represents the reduction that would be effected by the regulation. Until an agreement is reached, the site shall operate with the site-wide emissions caps reduced by the amount determined by the permittee in Conditions 1.e(1)(a) and 1.e(1)(b), and shall be deemed to be in compliance with the regulation.
- (vi) Except as provided in Conditions 1.e(1)(c)(iii) and 1.e(1)(c) (v), if the parties have not obtained agreement on the appropriate reduction estimate within three months of the administering agency's response in 1.e(1)(c) (ii), the permittee shall have the option of either:
 - (a) Adjusting the site-wide emissions caps by amounts determined by the administering agency in 1.e(1)(c)(iv), or
 - (b) Complying with the regulation as written no later than a date agreed upon by the parties which shall be no later than 12 months after the compliance date of the regulation.

- (d) The site-wide emissions caps will be reduced as described in Condition 1.e(1)(b).
 - (e) The adjustments to the site-wide emissions caps will represent compliance with the regulation.
- (2) Adjustments for Hazardous Air Pollutant (HAP) Regulations

No adjustment of the emissions caps shall be required when complying with applicable HAP regulations.
- f. Operating Under the Emissions Caps
 - (1) Compliance with Emissions Caps
 - (a) The site's actual emissions of criteria pollutants shall not exceed the total emissions cap established in Condition 1.a.
 - (b) The site's actual emissions of SO₂, PM-10, and NO_x shall not exceed the individual pollutant caps established in Conditions 1.b, 1.c, and 1.d.
 - (c) Compliance with the total emissions cap and individual pollutant caps shall be determined by comparing the specific cap to the 12-month rolling total for that cap. Compliance with the total emissions cap and individual pollutant caps shall be determined within two months of the end of each month based on the prior 12 months. The permittee shall use the calculation techniques identified in Table I to calculate site-wide actual criteria pollutant emissions.
 - (2) Installation of controls for significant modifications and significant new installations
 - (a) Condition 1.f(2) applies to significant modifications and significant new installations. Significant modifications for the purposes of this section are defined as changes to an existing process unit that result in an increase of the potential emissions of the process unit after consideration of existing controls of more than the significance levels listed in Condition 1.f(2)(b). Significant new installations for the purposes of this section are defined as new process units with potential emissions before controls that exceed the significance levels listed in Condition 1.f(2)(b). For purposes of this section, potential emissions means process unit point source emissions that would be generated by the process unit operating at its maximum capacity.
 - (b) Significance levels for determining significant modifications and significant new installations:

<u>Pollutant</u>	<u>Significance Level (TPY)</u>
VOC	40
CO	100
NO _x	40
SO ₂	40
PM-10	15

(c) For any significant modification or significant new installation, the permittee shall install at the process unit, emission controls, pollution prevention or other technology that represents good environmental engineering practice in the pharmaceutical or batch processing industry, based on the emission characteristics (flow, variability, pollutant properties, etc.) of the process unit. Examples of emission controls that meet this requirement include, but are not limited to:

- Condensation for high concentration VOC streams
- Thermal oxidation for low concentration high flow VOC streams
- Carbon adsorption for low concentration low flow VOC streams
- Water or caustic scrubbing for acid gases and water soluble compounds
- Water or acid scrubbing for caustic gases
- Dust collection (bag filters) or other particle removal for particulates
- Low NO_x technology for significant NO_x combustion sources

(3) Operation of listed control equipment

The permittee shall continue to operate the emissions control equipment listed in Table II as follows: the equipment shall be operated in a manner which minimizes emissions, considering the technical and physical operational aspects of the equipment and associated processes. This operation shall include an operation and maintenance program based on manufacturers' specifications and good engineering practice.

Table II. Operation of Listed Control Equipment.

Emission Unit	Control Device	Pollutant
General requirement for all air pollution control (APC) equipment: Maintain APC equipment in proper working order.		
Diesel generator (URN PH-1)	NO _x control	NO _x
Sludge dryer	Venturi scrubber (VS-390)	PM-10
Solvent recovery	Venturi/packed bed scrubber in solvent recovery (SCR-1000)	VOCs

(4) Prohibition on emissions trading

Emissions reductions of criteria pollutants listed in Condition 1.a shall not be credited for trade or sale to any other site. Nor shall the permittee increase its allowable emissions through acquisition of emissions credits from the open market or from any other site.

(5) Prohibition for acid rain opt-in program

The permittee shall not participate in the acid rain program under the “opt-in” provisions of Clean Air Act Section 410.

(6) Control requirements for certain units

- (a) Units that would otherwise be subject to requirements in 40 CFR 264 Subpart AA (40 CFR 264.1030 et seq.), or 40 CFR 265 Subpart AA (40 CFR 265.1030 et seq.), shall be controlled with a secondary brine condenser or thermal oxidizer, and monitored as specified in Condition 6.
- (b) The permittee shall continue its maintenance and repair program (that resulted in the site-specific emission factors referenced in Table I) for all equipment components (valves, flanges, pumps, compressors, sampling connections) that are in contact with VOCs and/or volatile organics (volatile organics as defined in 40 CFR 264 and 265).
- (c) The permittee shall install and maintain covers with no visible holes, gaps, or other open spaces on all containers that would otherwise be regulated under 40 CFR 264 Subpart CC (40 CFR 264.1080 et seq.), or 40 CFR 265 Subpart CC (40 CFR 265.1080 et seq.).

- (d) The permittee shall install covers with no visible holes, gaps, or other open spaces on all storage/accumulation tanks that would otherwise be subject to the tank provisions of 40 CFR 264 Subpart CC (40 CFR 264.1080 et seq.), or 40 CFR 265 Subpart CC (40 CFR 265.1080 et seq.). Fixed roof tanks may be equipped with one or more conservation vents.
- (e) The permittee shall install covers with no visible holes, gaps, or other open spaces on hazardous waste treatment tanks that would otherwise be subject to the treatment tank provisions of 40 CFR 264 Subpart CC (40 CFR 264.1080 et seq.), or 40 CFR 265 Subpart CC (40 CFR 265.1080 et seq.). Such tanks shall either be equipped with a floating roof, or be vented to a brine condenser or thermal oxidizer and monitored as specified in Condition 6.

(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 1 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

2. **Limitations** – The natural gas-fired boilers (B-7 and B-8) shall be equipped with low nitrogen oxide (NO_x) technology.
(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, 40 CFR 60.49b(u)(1)(i) and Section 2 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)
3. **Limitations** – The approved fuels for boilers (B-7 and B-8) are natural gas as the primary fuel and distillate oil or propane as backup fuels. Distillate oil is defined as fuel oil that meets the specifications for fuel oil numbers 1 or 2 under the American Society for Testing and Materials, ASTM D396-78 "Standard Specification for Fuel Oils."
(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454 and Section 2 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)
4. **Limitations** – The approved fuel for the boiler (B-4) is distillate oil. Distillate oil is defined as fuel oil that meets the specifications for fuel oil numbers 1 or 2 under the American Society for Testing and Materials, ASTM D396-78 "Standard Specification for Fuel Oils."
(9 VAC 5-80-110)
5. **Monitoring and Recordkeeping** – The permittee shall install, calibrate, maintain, and operate a continuous monitoring and recording system on the natural gas-fired boilers for measuring NO_x emissions discharged to the atmosphere using a continuous emissions monitoring system or a predictive emissions monitoring system. Monitoring shall be in accordance with Table III, Section B.1. and B.2.
(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, 40 CFR 60.49b(u)(1)(ii) and Section 4 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

6. **Monitoring and Recordkeeping** – The permittee shall comply with the monitoring, recordkeeping and reporting requirements specified in Table III. Monitoring, recordkeeping and reporting as prescribed in this Condition shall constitute the basis for the permittee's certification of compliance with the provisions of the PSD permit pursuant to Title V.
(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, 40 CFR 60.49b(u)(1)(ii) and Section 4 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

Table III. Monitoring, Recordkeeping, and Reporting Requirements.

Emission Unit		Pollutants subject to individual caps	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Section A: Site-Wide Criteria Pollutant Emissions							
Cap calculations	A.1	N/A	Monthly	Monthly	Monthly	Record	12-month rolling total site wide criteria pollutant emissions
	A.2	N/A	Monthly	Monthly	Monthly	Record	12-month rolling total site wide SO ₂ , NO _x , PM-10, CO, and VOC emissions respectively
	A.3	N/A	Monthly	Monthly	Monthly	Record	Total emissions cap, SO ₂ cap, NO _x cap, PM-10 cap
	A.4	N/A	Monthly	Monthly	Monthly	Record	Current HEP
	A.5	N/A	Monthly	Monthly	Monthly	Record	Current reporting tier as defined in Condition 6.a.
	A.6	N/A	Semi-annually	Semi-annually	Monthly	Report	12-month rolling total site wide criteria pollutant emissions for each month covered by report.
	A.7	SO ₂ , NO _x	Semi-annually	Semi-annually	Monthly	Report	12-month rolling total SO ₂ , NO _x , PM-10, CO, and VOC emissions, respectively for each month covered by report.
	A.8	SO ₂ , NO _x	Annually	Semi-annually	Monthly	Report	Total criteria pollutant emissions and SO ₂ , NO _x , and PM-10 emissions reduced from XL project since last report (difference between cap/subcap and actuals)

Emission Unit		Pollutants subject to individual caps	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
	A.9	SO ₂ , NO _x	Annually	Semi-annually	Monthly	Report	Total criteria pollutant emissions and SO ₂ , NO _x , and PM-10 emissions reduced from XL project since start of PSD permit (cumulative difference between cap/subcap and actuals)
	A.10	SO ₂ , NO _x	Annually	Semi-annually	Monthly	Report	Reporting tier as defined in Condition 6.a for each month covered by report.
	A.11	SO ₂ , NO _x	Within one month of changing from a lower tier to a higher tier			Report	Reporting tier as defined in Condition 6.a.
Cap adjustments	A.12	N/A	Monthly	Monthly	Monthly	Record	Any adjustments to total emissions cap or individual caps
	A.13	SO ₂ , NO _x	Annually	Semi-annually	Monthly	Report	Any adjustments to total emissions cap or individual caps, and explanation for adjustment
	A.14	N/A	Upon compliance date of new regulation			Record	Record decision whether to implement regulation as written or adjust cap under Condition 1.e(1)
	A.15	N/A	120 or 190 days prior to compliance date of new regulation selected for cap adjustment as required by Condition 1.e(1)(c).			Report	Report total criteria pollutant reduction resulting from regulation, HEP or alternate emission rate, and basis for estimate
Condition 1.f(2) Installations	A.16	N/A	Upon operation of any modification or new installation			Record	Calculations determining whether the process modification or new installation triggers Condition 1.f(2)(b) significance levels

Emission Unit		Pollutants subject to individual caps	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
	A.17	N/A	Within 45 days of operation of any significant modification or significant new installation			Report	Submit report describing the significant modification or significant new installation (as defined in Condition 1.f(2)), and the controls, pollution prevention or other technology employed to meet the requirements of Condition 1.f(2). If the method employed is not one of the methods listed in Condition 1.f(2)(c), include an explanation for the technology selected.
	A.18	N/A	Within 45 days of operation of any significant modification or significant new installation			Report	Submit report providing the following information: a schematic diagram showing the type and sequence of new equipment installed or modified, equipment identification numbers, location of the new installation or modification on the plant site, air pollution control equipment associated with the new installation or modification, and the total emissions of each criteria pollutant emitted from each piece of new or modified equipment.
Operation of Listed Controls (Condition 1.f(3))	A.19	N/A	Ongoing	Ongoing	Ongoing	Record	Record time control equipment listed in Table II is not operating while the controlled emissions unit is operating.
	A.20	N/A	Annually	Annually	Annually	Report	Percent time that each control device listed in Table II operated over the previous year.

Emission Unit		Pollutants subject to individual caps	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Modeling Parameters	A.21	N/A	Upon request within reasonable time period			Report	Stack parameters and modeling inputs for sources of PM-10, NO _x and SO ₂ .
Section B: Powerhouse							
Natural Gas-Fired Boilers	B.1	N/A	Continuously	Continuously	Continuously	Monitor and Record	NO _x and opacity using CEMs or PEMS. The requirement to operate the opacity CEMS applies only when burning distillate oil in the natural gas-fired boilers.
	B.2	N/A	Monthly	Monthly	Monthly	Monitor and Record	Type and amount of fuel used
	B.3	N/A	Monthly	Monthly	Monthly	Record	Emissions based on stack test, NO _x CEM/PEM, emission factors and fuel usage
	B.4	SO ₂ , NO _x	Annually	Semi-annually	Monthly	Report	Emissions based on stack test, NO _x CEM/PEM, emission factors and fuel usage
	B.5	N/A	Monthly	Monthly	Monthly	Record	Percent time burning natural gas and backup fuel
	B.6	SO ₂ , NO _x	Annually	Semi-annually	Monthly	Report	Percent time burning natural gas and backup fuel
Backup oil Unit	B.7	N/A	Monthly	Monthly	Monthly	Monitor and Record	Amount and type of fuel used
	B.8	N/A	Monthly	Monthly	Monthly	Record	Emissions based on emission factors and fuel usage
Section C: Emergency Generators							
All units	C.1	N/A	Monthly			Record	Emissions based on emission factors, operation schedule and any non-scheduled event requiring operation of a unit for five days or more.

Emission Unit		Pollutants subject to individual caps	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
	C.2	N/A	Annually			Report	Emissions based on emission factors, operation schedule and any non-scheduled event requiring operation of a unit for five days or more.
	C.3	SO ₂ , NO _x		Monthly	Monthly	Monitor and Record	Time of operation
	C.4	SO ₂ , NO _x		Monthly	Monthly	Monitor and Record	Amount and type of fuel used
	C.5	SO ₂ , NO _x		Monthly	Monthly	Record	Emissions based on emission factor and fuel usage
	C.6	SO ₂ , NO _x		Semi-annually	Monthly	Report	Emissions based on emission factor and fuel usage
Powerhouse Generator (URN PH-1)	C.7	N/A	Annually	Annually	Annually	Monitor	Verify that original timing as set by the manufacturer has not been changed
Section D: Production Process Units							
	D.1	N/A	Monthly	Monthly	Monthly	Record	Changes to the process that affect the emission factor
	D.2	N/A	Monthly	Monthly	Monthly	Record	Maintain current process emission factors
	D.3	N/A	Monthly	Monthly	Monthly	Monitor and Record	WWTP influent flow, temperature and VOC constituent concentrations
	D.4	N/A	Monthly	Monthly	Monthly	Monitor and Record	Number of production units
	D.5	N/A	Monthly	Monthly	Monthly	Record	Emissions based on emission factor and number of production units
	D.6	SO ₂ , NO _x	Annually	Semi-annually	Monthly	Report	Emissions based on emission factor and number of production units

Emission Unit		Pollutants subject to individual caps	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
	D.7	SO ₂ , NO _x		Annually	Semi-annually	Report	Summary of changes to emission factors based on process modifications
	D.8	N/A	Annually	Annually	Annually	Report	Basis for point source emission factors (see example 1 below)
	D.9	N/A	Within 180 days of start-up of new unit operation			Record	Emission factor verification study for unit operations not included in the following list: Fill, Evacuation, Gas Sweep, Heat, Gas Evolution, Vacuum Distillation, Vacuum Drying, Tank Breathing

Example 1: Basis for Process Vent Emission Factor

For Each Process:

Step Number	Vessel I.D.	VOC Emissions (lb/step)
1	RE-101	0.1
2	RE-101	2.5
3	RE-101	20.0
4	TA-105	0.2
...
80	TA-308	0.3
Total	-	95.2 lb/production unit

Section E: Criteria Pollutant Control Equipment

Sludge Dryer Venturi scrubber (VS-390)	E.3	N/A	Continuously	Continuously	Continuously	Monitor	Pressure drop and liquid flow
	E.4	N/A	Once per day	Once per day	Once per day	Record	Pressure drop and liquid flow

Emission Unit		Pollutants subject to individual caps	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
Solvent recovery Venturi/packed bed scrubber (SCR-1000)	E.14	N/A	Continuously			Monitor	Liquid flow and differential pressure drop
	E.15	N/A	Once per batch			Record	Liquid flow and differential pressure drop
Units that would otherwise be regulated under 40 CFR 264 Subpart AA or 265 Subpart AA controlled by a condenser	E.20	N/A	Continuously	Continuously	Continuously	Monitor	Coolant flow and coolant outlet temperature
	E.21	N/A	Once per batch	Once per batch	Once per batch	Record	Coolant flow and coolant outlet temperature
Units that would otherwise be regulated under 40 CFR 264 Subpart AA or 265 Subpart AA controlled by a thermal oxidizer	E.22	N/A	Continuously			Monitor and Record	Combustion chamber temperature
VOC and volatile organic ⁴ bulk storage tanks ≥ 10,000-gal capacity: conservation vent	E.23	N/A	Annually	Annually	Annually	Monitor	Verify conservation vent pressure setting at or above 0.030 psi

Emission Unit		Pollutants subject to individual caps	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
New condensers added under 1.f(2) of the permit	E.24	N/A	Continuously	Continuously	Continuously	Monitor	Coolant flow and coolant outlet temperature
	E.25	N/A	Once per batch	Once per batch	Once per batch	Record	Coolant flow and coolant outlet temperature
New non-catalytic thermal oxidizers added under 1.f(2) of the permit	E.26	N/A	Continuously			Monitor and Record	Combustion chamber temperature
New catalytic thermal oxidizers added under 1.f(2) of the permit	E.27	N/A	Continuously			Monitor and Record	Inlet temperature and temperature increase across catalyst bed.
New scrubbers added under 1.f(2) of the permit	E.28	N/A	Continuously			Monitor	Scrubber water flow and differential pressure
	E.29	N/A	Once per batch			Record	Scrubber water flow and differential pressure
New carbon adsorption systems added under 1.f(2) of the permit	E.30	N/A	Within 60 days of unit's initial startup			Record	Establish appropriate regeneration cycle based on breakthrough rate, and performance indicator (e.g., online time, number of batches, or breakthrough indicator)
	E.31	N/A	Once per batch			Record	Carbon performance indicator
New regenerative carbon adsorption systems added under 1.f(2) of the permit	E.32	N/A	Once per regeneration cycle			Monitor and Record	Regeneration medium mass flow during regeneration and carbon bed temperature after regeneration

Emission Unit		Pollutants subject to individual caps	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
New dust collection systems added under 1.f(2) of the permit	E.33	N/A	Continuously			Monitor	Differential pressure across filter
	E.34	N/A	Once per batch			Record	Differential pressure across filter
Each condenser at site with uncontrolled emissions > 8000 lbs/yr VOCs	E.35	N/A		Continuously	Continuously	Monitor	Coolant flow and coolant outlet temperature
	E.36	N/A		Once per batch	Once per batch	Record	Coolant flow and coolant outlet temperature
All non-catalytic thermal oxidizers at site	E.37	N/A		Continuously	Continuously	Monitor and Record	Combustion chamber temperature
All catalytic thermal oxidizers at site	E.38	N/A		Continuously	Continuously	Monitor and Record	Inlet temperature and temperature increase across catalyst bed.
All scrubbers at site	E.39	N/A		Continuously	Continuously	Monitor	Scrubber water flow and differential pressure
	E.40	N/A		Once per batch	Once per batch	Record	Scrubber water flow and differential pressure
All carbon adsorption systems at site	E.41	N/A		Within 60 days of unit's initial startup		Record	Establish appropriate regeneration cycle based on breakthrough rate, and performance indicator (e.g., online time, number of batches, or breakthrough indicator)
	E.42	N/A		Once per batch	Once per batch	Record	Carbon performance indicator
All regenerative carbon adsorption systems at site	E.43	N/A		Once per regeneration cycle	Once per regeneration cycle	Monitor and Record	Regeneration medium mass flow during regeneration and carbon bed temperature after regeneration

Emission Unit		Pollutants subject to individual caps	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
All dust collection systems at site	E.44	N/A		Continuously	Continuously	Monitor	Differential pressure across filter
	E.45	N/A		Once per batch	Once per batch	Record	Differential pressure across filter
Each condenser at site with uncontrolled emissions > 4000 lbs/yr VOCs	E.46	N/A			Continuously	Monitor	Coolant flow and coolant outlet temperature
	E.47	N/A			Once per batch	Record	Coolant flow and coolant outlet temperature
All condensers at site with uncontrolled emissions > 4000 lbs/yr VOCs	E.48	N/A			One-time ⁵	Monitor and Record	Confirm condenser performance with stack test or, where stack test has proven infeasible to determine performance efficiency, other engineering assessments may be used upon DEQ approval
All thermal oxidizers at site	E.49	N/A			One-time ⁵	Monitor and Record	Perform stack test on unit to determine criteria pollutant emissions
All scrubbers at site	E.50	N/A			One-time ⁵	Monitor and Record	Confirm scrubber performance with stack test or, where stack test has proven infeasible to determine performance efficiency, other engineering assessments may be used upon DEQ approval

Emission Unit		Pollutants subject to individual caps	Tier I Frequency	Tier II Frequency	Tier III Frequency	Monitor/Record /Report	Requirement
All carbon adsorption systems at site	E.51	N/A			One-time ⁵	Monitor and Record	Confirm carbon system performance with stack test or, where stack test has proven infeasible to determine performance efficiency, other engineering assessments may be used upon DEQ approval
All dust collection systems at site	E.52	N/A			One-time ⁵	Monitor and Record	Confirm dust collection system performance with stack test or, where stack test has proven infeasible to determine performance efficiency, other engineering assessments may be used upon DEQ approval

⁴ As defined in 40 CFR 264 and 165.

⁵ Perform requirement within 6 months of reaching Tier III for the first time for existing equipment, and within 3 months of commencement of operation for new equipment. A stack test performed no more than 5 years prior to reaching Tier III may be used in place of a new test provided that the emission controls and operating conditions are still representative of those under which the prior test was conducted.

(Condition 6 – continued)

a. Reporting Tiers

(1) Tier I requirements are in effect under the following circumstances:

- (a) Actual criteria pollutant emissions for the last 12 months are determined to be greater than 0% and less than 75% of the total emissions cap and during the startup period of the permit (the period between November 9, 2000 and July 12, 2001), and
- (b) Actual emissions of SO₂ or NO_x for the last 12 months are determined to be greater than 0% and less than 75% of the individual emissions cap for each pollutant.

(2) Tier II requirements are in effect under the following circumstances:

- (a) Except as provided in Condition 6.a(1)(a), actual criteria pollutant emissions for the last 12 months are determined to be equal to or greater than 75% and less than 90% of the total emissions cap, or
- (b) Actual emissions of SO₂ or NO_x for the last 12 months are determined to be equal to or greater than 75% and less than 90% of the individual emissions cap for each pollutant. If actual emissions of SO₂ or NO_x for the last 12 months trigger Tier II requirements and total criteria pollutant emissions remain below Tier II (as determined according to Condition 6.a(2)(a)), only those Tier II-level provisions applicable to the triggering pollutant(s), as indicated in Table III, shall apply.

(3) Tier III requirements are in effect under the following circumstances:

- (a) Except as provided in Condition 6.a(1)(a), actual criteria pollutant emissions for the last 12 months are determined to be equal to or greater than 90% of the total emissions cap, or
- (b) Actual emissions of SO₂ or NO_x for the last 12 months are determined to be equal to or greater than 90% of the individual emissions cap for each pollutant. If actual emissions of SO₂ or NO_x for the last 12 months trigger Tier III requirements and total criteria pollutant emissions remain below Tier III (as determined according to Condition 6.a(3)(a)), only those Tier III-level provisions applicable to the triggering pollutant(s), as indicated in Table III, shall apply.

b. Except as provided in Condition 6.a(1)(a), Tier I, II and III monitoring, recordkeeping and reporting requirements for SO₂, PM-10, NO_x, CO and VOCs are found in Table III.

c. Emission Calculation Techniques

- (1) Table I specifies the emission calculation techniques to be used for each emission type at the site.
 - (2) If the AP-42 emission factors described in Table I are updated, and the project signatories fail to agree upon appropriate changes needed to incorporate these updated factors into the permit as provided in Condition 131.a, DEQ may at its discretion initiate the following actions:
 - (a) Describe to the project stakeholders in writing that use of the updated AP-42 emission factor is important for the technical validity of the site's emission calculations.
 - (b) Obtain from the permittee:
 - (i) Confirmation that the emission source(s) at the site are the same type of sources as those for which the AP-42 emission factor applies, and
 - (ii) Agreement on how the emissions caps, HEP and current actual emissions should be adjusted to reflect the updated emission factor.
 - (c) Provided that agreement is reached in Condition 6.c(2)(b), initiate the permit modification procedure to incorporate the change into the permit.
- d. Monthly Requirements
- (1) Beginning on the first day of each month, the permittee shall perform the monitoring, recordkeeping and reporting requirements in Table III according to the applicable reporting tier specified in Condition 6.a determined by the 12 month rolling total of criteria pollutant emissions, SO₂ emissions, or NO_x emissions of the period ending three calendar months prior to that date. The monthly calculations specified in Table III shall cover the period which ended two calendar months prior to that date.
 - (2) Example
 - (a) By 3/1/97 calculate the 12 month rolling total of criteria pollutant emissions for 1/1/96 through 12/31/96.
 - (b) Assume 1/1/96 – 12/31/96 emissions total equals 80% of total emissions cap.
 - (c) Assume Tier I requirements were in effect 2/97 and prior.
 - (d) For the month of April 1997, Tier II monitoring, recordkeeping and reporting requirements would be in effect.
 - (e) Twelve month rolling total including the first month of Tier II data (from 4/97) will be calculated by 7/1/97 for period 5/1/96 through 4/30/97.
- e. Records required in this section shall be retained on site for at least five years.

f. Adherence to Continuous Monitoring Requirements

This paragraph applies to each of the monitoring systems required by the PSD permit. Adherence to the requirement to monitor continuously shall be demonstrated by either Condition 6.f(1) or 6.f(2).

- (1) Collection of at least 90% of the data required to be collected by the permit during any one month, or
- (2) Collection of less than 90% of the data required to be collected by the permit during any one month, and either
 - (a) Verification and documentation through independent means sufficient to establish that the control device was operating properly during the period that the monitoring system failed to collect data, or
 - (b) The assumption for the purpose of emission calculations that the control device was not operating during the period that the monitoring system failed to collect data.

g. HAP Monitoring and Emissions Testing Requirements Under CAA Section 112(d)

- (1) Compliance with monitoring requirements required for a particular control device under an applicable CAA 112(d) regulation, under the sections of Merck's Title V Operating Permit entitled "Facility-Wide Conditions for Hazardous Air Pollutants - Synthetic Minor Operation" and "Facility-Wide Conditions for Hazardous Air Pollutants – Major Source Operation", where such requirements are more stringent than the applicable Table III monitoring requirement, shall constitute compliance with any Condition 6 monitoring requirement applicable to that device.
 - (2) Compliance with emissions testing requirements required for a particular control device under an applicable CAA 112(d) regulation shall constitute compliance with any Condition 6 emissions testing requirement applicable to that device.
- h. In addition to the requirements in Condition 143.d for visible emissions and odor, the DEQ shall be notified of each event involving malfunction or bypass of a control device listed in Table II or any new control device installed pursuant to Condition 1.f(2), if the total criteria pollutant emissions resulting from such event are expected to exceed 5% of the total emissions cap. This notification shall be provided no later than four daytime business hours after the determination of applicability of this paragraph is made.

(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 4 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

7. **Reporting** – Reports shall be submitted as detailed in Table III.
(9 VAC 5-80-110)
8. **Reporting** – Annual and Semi-Annual Reporting Requirements

- a. On September 1 of each year, the permittee shall submit a semi-annual report for the six-month period ending June 30th if any tier reached during that period required a semi-annual report.
- b. On March 1 of each year, the permittee shall submit a semi-annual report for the six-month period ending December 31st if any tier reached during that period required a semi-annual report.
- c. On March 1 of each year, the permittee shall submit an annual report for the 12-month period ending December 31st.

(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 4 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

9. **Reporting** – Reports required in Condition 7 shall be submitted to the project signatories. (9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 4 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)
10. **Reporting** – Reports required in Condition 8 shall contain certification by the site's responsible official that to his belief, based on reasonable inquiry, the information submitted in the report is true, accurate, and complete. (9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 4 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)
11. **Reporting** – Annual Progress Report
In addition to the reports otherwise required in Conditions 1 through 13, the permittee shall submit to the project stakeholders and to other parties an annual progress report. This report shall include a summary of the site's actual emissions and site-wide emissions caps, emissions reduced as a result of the PSD permit, and other information about the site and the operation of the PSD permit. (9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 4 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)
12. **Testing** – Within six months of reaching Tier III for the first time for existing equipment, and within three months of commencement of operation for new equipment when the site is operating subject to Tier III requirements, one-time stack tests or evaluations using an appropriate engineering calculation tool shall be performed on the following:

Emission Unit	Requirement
All condensers at site with uncontrolled emissions > 4000 lb/yr VOCs	Confirm condenser performance with engineering calculation tool or stack test
All thermal oxidizers at site	Perform stack test to determine criteria pollutant emissions
All scrubbers at site	Confirm scrubber performance with engineering calculation tool or stack test
All carbon adsorption systems at site	Confirm carbon system performance with engineering calculation tool or stack test
All dust collection systems at site	Confirm dust collection system performance with engineering calculation tool or stack test

A stack test performed no more than five years prior to reaching Tier III may be used in place of a new test provided that the emission controls and operating conditions are still representative of those under which the prior test was conducted.

(9 VAC 5-80-110 and Table 4.2 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

13. **Testing** – If testing is conducted in addition to the monitoring specified in the permit, the permittee shall use the appropriate method(s) in accordance with the procedures approved by the DEQ.

(9 VAC 5-80-110)

Facility Wide Conditions for Hazardous Air Pollutants

14. **Limitations** – Sitewide emissions of hazardous air pollutants (HAPs) shall be less than the limitations specified below:

Any individual HAP	9.9 tons/yr
Total HAPs	24.9 tons/yr

Sitewide HAP emissions shall be calculated monthly as the sum of each consecutive 12-month period.
(9 VAC 5-80-110)

15. **Limitations** – HAP emissions from the manufacturing areas shall be controlled as indicated below:

Table IV. HAP control requirements

Process	Control Device
Central Solvent Recovery	SCR-1000
MK-991	SCR-9050

Each control device shall be provided with adequate access for inspection and shall be in operation when the process is operating except during start-up, shutdown, or malfunction, or when maintenance is performed on the control device and it is not practicable to shut down the process. The permittee shall keep records documenting periods of control device operation and periods of process operation during which the control device is not operating. The content and format of such records shall be arranged with the DEQ.
(9 VAC 5-80-110)

16. **Limitations** – Volatile HAP emissions from wastewater treatment shall be controlled by fixed roof covers on the two equalization tanks (TA-120 and TA-121) and on the pump station (TA-115). The covers shall be provided with adequate access for inspection.
(9 VAC 5-80-110)
17. **Limitations** – The permittee shall maintain the upgraded site sewer system serving pharmaceutical manufacturing operations from which wastewater streams containing organic HAPs (excluding ethylene glycol) are discharged in conformance with the applicable emission suppression requirements specified in 40 CFR 63.1256. This portion of the chemical sewer system upgrade shall include applicable individual drain systems, open sumps, and basins from the point of discharge up to and including the point where the discharge enters the wastewater treatment plant (WWTP).
(9 VAC 5-80-110)

18. **Monitoring – Control Device Bypass Lines** – If any of the closed-vent systems used to route HAP emissions from the processes listed in Table IV to the respective control devices contain bypass lines that could divert a vent stream containing HAPs away from the designated control device or an alternative control device, one of the following provisions shall be met:
- a. The permittee shall install, calibrate, maintain, and operate a flow indicator that determines, at least once every 15 minutes, whether vent stream flow is present. A flow indicator means a device that indicates whether gas flow is, or whether the valve position would allow gas flow to be, present in a line. Records of the durations of periods of flow through such bypass routes shall be maintained and such periods shall be used to adjust HAP emission factors and calculations. The flow indicator shall be installed at the entrance to any bypass line that could divert the vent stream containing HAPs away from the designated control device or an alternative control device; or
 - b. The permittee shall secure the bypass line valve in the closed position with a car seal or lock-and-key type configuration. A visual inspection of the seal or closure mechanism shall be performed at least once every month to ensure that the valve is maintained in the closed position and the vent stream containing HAPs is not diverted through the bypass line.

Equipment such as low leg drains, high point bleeds, analyzer vents, open-ended valves or lines, rupture disks and pressure relief valves needed for safety purposes are not subject to this condition. In lieu of monitoring, the permittee may maintain documentation showing that a closed-vent system does not contain HAPs.

(9 VAC 5-80-110)

19. **Monitoring – Leak Maintenance and Repair Program** – The permittee shall continue its maintenance and repair program for all equipment components (pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, control devices, and closed-vent systems) that are in contact with aHCl and/or organic HAPs.
- (9 VAC 5-80-110)
20. **Monitoring – Anhydrous HCl (aHCl) Leak Detection** – Any pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, control devices, and closed-vent systems that operate in aHCl service for 300 hours or more during the calendar year shall be monitored in accordance with the frequencies below:
- a. Once every two years if the percent leaking equipment/equipment components was less than 1.0% during the last required monitoring period. The permittee may comply with this requirement by monitoring at least 40% of the equipment/equipment components in the first year and the remainder in the second year. The percent leaking equipment/equipment components will be calculated for the total of all monitoring performed during the two-year period.

- b. Once every four years if the percent leaking equipment/equipment components was less than 0.5% during the last required monitoring period. The permittee may comply with this requirement by monitoring at least 20% of the equipment/equipment components each year until all equipment/equipment components have been monitored within four years.
- c. Annually if the percent leaking equipment/equipment components was greater than or equal to 1.0% during the last required monitoring period.
- d. In lieu of conducting aHCl component monitoring, an annual pressure test may be conducted on equipment handling aHCl to determine the presence of leaks of aHCl. If the pressure test results indicate a leak is present, the leak rate shall be quantified using methods approved by DEQ.
- e. All aHCl monitoring equipment shall be operated in accordance with manufacturer's recommendations.
- f. Equipment in vacuum service is excluded from the requirements of this condition.
- g. Equipment utilizing aHCl associated with lab activities identified in the overall site-specific emission factor for lab emissions is excluded from the requirements of this condition in accordance with Condition 53.i.

(9 VAC 5-80-110)

21. **Monitoring – Leak Definition for aHCl** – The instrument reading that defines a leak during aHCl leak detection is:
- a. Greater than or equal to 10,000 ppm for agitators, or
 - b. Greater than or equal to 2,000 ppm for pumps, or
 - c. Greater than or equal to 500 ppm for compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, control devices, and closed-vent systems.

(9 VAC 5-80-110)

22. **Monitoring – Organic HAP Leak Detection** – Any pumps, compressors, agitators, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, control devices, and closed-vent systems that operate in organic HAP service for 300 hours or more during the calendar year shall be monitored in accordance with the frequencies below:

- a. Once every two years if the percent leaking equipment/equipment components was less than 1.0% during the last required monitoring period. The permittee may comply with this requirement by monitoring at least 40% of the equipment/equipment components in the first year and the remainder in the second year. The percent leaking equipment/equipment components will be calculated for the total of all monitoring performed during the 2-year period.
- b. Once every four years if the percent leaking equipment/equipment components was less than 0.5% during the last required monitoring period. The permittee may comply with this requirement by monitoring at least 20% of the equipment/equipment components each year until all equipment/equipment components have been monitored within four years.
- c. Annually if the percent leaking equipment/equipment components was greater than or equal to 1.0% during the last required monitoring period.
- d. In lieu of conducting organic HAP component monitoring, an annual pressure test may be conducted on equipment handling organic HAPs to determine the presence of leaks of organic HAPs. If the pressure test results indicate a leak is present, the leak rate shall be quantified using methods approved by the DEQ.
- e. Equipment in vacuum service is excluded from the requirements of this condition.
- f. Equipment in ethylene glycol service is excluded from the requirements of this condition.
- g. Equipment utilizing organic HAP associated with lab activities identified in the overall site-specific emission factor for lab emissions is excluded from the requirements of this condition in accordance with Condition 53.i

(9 VAC 5-80-110)

23. **Monitoring – Leak Definition for Organic HAPs** – The instrument reading that defines a leak during organic HAP leak detection is:
- a. Greater than or equal to 10,000 ppm for agitators, or
 - b. Greater than or equal to 2,000 ppm for pumps, or
 - c. Greater than or equal to 500 ppm for compressors, pressure relief devices, sampling connection systems, open-ended valves or lines, valves, connectors, instrumentation systems, control devices, and closed-vent systems.

(9 VAC 5-80-110)

24. **Monitoring – Leak Detection Equipment for Organic HAPs** – Organic HAP leak detection equipment shall be operated in accordance with the following conditions:
- a. Detection instrument performance criteria.

- (1) Except as provided in (2) below, the detection instrument shall meet the performance criteria of 40 CFR Part 60, Appendix A, Method 21, except the instrument response factor criteria in section 3.1.2(a) of Method 21 shall be for the average composition of the process fluid, not each individual HAP in the stream. For process streams that contain nitrogen, air, or other inerts which are not organic HAP, the average stream response factor shall be calculated on an inert-free basis.
 - (2) If no instrument is available at the plant site that will meet the performance criteria specified in (1) above, the instrument readings may be adjusted by multiplying by the average response factor of the process fluid, calculated on an inert-free basis as described in (1) above.
 - b. The detection instrument shall be calibrated before use on each day of its use by the procedures specified in 40 CFR Part 60, Appendix A, Method 21.
 - c. Calibration gases shall be as follows:
 - (1) Zero air (less than 10 parts per million hydrocarbon in air); and
 - (2) Mixtures of methane in air at a concentration approximately equal to the applicable leaks definition concentrations defined in Condition 23. A calibration gas other than methane in air may be used if the instrument does not respond to methane or if the instrument does not meet the performance criteria specified in (1) above. In such cases, the calibration gas may be a mixture of one or more of the compounds to be measured in air.
 - d. The permittee may elect to adjust or not adjust instrument readings for background. If the permittee elects to not adjust readings for background, all such instrument readings shall be compared directly to the applicable leak definition to determine whether there is a leak. If the permittee elects to adjust instrument readings for background, the permittee shall measure background concentration. The permittee shall subtract background reading from the maximum concentration indicated by the instrument.
 - e. The background level shall be determined according to the procedures in 40 CFR Part 60, Appendix A, Method 21.
 - f. The permittee may utilize alternative monitoring methods, upon approval by the DEQ.
- (9 VAC 5-80-110)
25. **Monitoring – Leak Repair** – The permittee shall repair any detected leaks, as indicated by the methods described in Conditions 20 – 24 or by visual, audible, or olfactory means, as soon as practicable, except as provided in Condition 26 below.
- a. A first attempt at repair shall be made no later than 5 in-service calendar days after the leak is detected.

- b. Repair shall be completed no later than 15 in-service calendar days after the leak is detected, except as provided in Condition 26 or Condition 29.c below. If delay of repair is required in accordance with Condition 26.a or 26.b, monitoring to verify repair must occur within 15 in-service calendar days after start-up of the equipment.

(9 VAC 5-80-110)

26. **Monitoring – Delay of Repair** – Delay of repair of equipment for which leaks have been detected is allowed if one of the following conditions exist:

- a. The repair is technically infeasible without a process shutdown. Repair of this equipment shall occur by the end of the next scheduled process shutdown.
- b. The owner or operator determines that repair personnel would be exposed to an immediate danger if attempting to repair without a process shutdown. Repair of this equipment shall occur by the end of the next scheduled process shutdown.
- c. Equipment leaks have been detected but the equipment associated with the leak is isolated from the process and does not remain in HAP service.

(9 VAC 5-80-110)

27. **Monitoring – Unsafe to Monitor** – Equipment that is unsafe to monitor is exempt from the monitoring requirements of Conditions 20 and 22 if the permittee meets the requirements below:

- a. Equipment may be designated as unsafe to monitor if the permittee determines that monitoring personnel would be exposed to an immediate danger as a consequence of complying with the monitoring requirements in Conditions 20 and 22.
- b. The permittee has a written plan that requires monitoring of the equipment as frequently as practicable during safe-to-monitor times, but at least once every 5 years.

(9 VAC 5-80-110)

28. **Monitoring – Difficult to Monitor** – Equipment that is difficult to monitor is exempt from the monitoring requirements of Conditions 20 and 22 if the permittee meets the requirements below:

- a. The permittee determines that the equipment cannot be monitored without elevating the inspecting personnel more than 2 meters above a support surface; and
- b. The permittee has a written plan that requires inspection of the equipment at least once every 5 years.

(9 VAC 5-80-110)

29. **Monitoring – Inaccessible to Monitor** – Equipment that is inaccessible to monitor is exempt from the monitoring requirements of Conditions 20 and 22 if the permittee meets the requirements below:
- Connectors that are buried; insulated in a manner that prevents access to the connector by a monitor probe; obstructed by equipment or piping that prevents access to the connector by the monitoring probe; unable to be reached from a wheeled scissor-lift or hydraulic-type scaffold which would allow access to equipment up to 7.6 meters (25 feet) above the ground; or not able to be accessed at any time in a safe manner to perform monitoring. Unsafe access includes, but is not limited to, the use of a wheeled scissor-lift on unstable or uneven terrain, the use of a motorized man-life basket in areas where an ignition potential exists, or access would require near proximity to hazards such as electrical lines, or would risk damage to equipment.
 - Connectors that would require elevating the monitoring personnel more than 2 meters above a permanent support surface or would require the erection of scaffold.
 - If any inaccessible connector is observed by visual, audible, olfactory, or other means to be leaking, the leak shall be eliminated as soon as practicable, but no later than 15 in-service calendar days after the leak is detected, except as provided in Conditions 25 and 26 above.
- (9 VAC 5-80-110)
30. **Monitoring – Organic HAP Service** – “In organic HAP service” means that a piece of equipment either contains or contacts a process fluid (liquid or gas) that is at least five percent, by weight, total organic HAPs and shall not apply during periods of non-operation of equipment subject to organic HAP leak detection requirements in which the lines are drained and depressurized.
(9 VAC 5-80-110)
31. **Monitoring – aHCl Service** – “In aHCl service” means that a piece of equipment either contains or contacts process aHCl (gas) that is at least five percent, by weight, aHCl and shall not apply during periods of non-operation of equipment subject to aHCl leak detection requirements in which the lines are drained and depressurized.
(9 VAC 5-80-110)
32. **Monitoring – Emission Factor Adjustment** – The following provisions shall govern adjustments to emission factors for HCl and/or organic HAP equipment/equipment components:
- If, upon completion of a monitoring cycle, the permittee determines that the emission factors developed from monitoring data obtained in the most recent monitoring cycle are less than the currently approved emission factors, the permittee may apply the lower emission factors to the rolling annual emissions calculations to reflect the decreased emission factors for the 12-month period preceding completion of the most recent monitoring cycle upon approval of the DEQ. The adjusted emission factors may be used until the next monitoring cycle to quantify emissions from equipment/equipment components in HAP service.

- b. If upon completion of a monitoring cycle, the permittee determines that the emission factors developed from monitoring data obtained in the most recent monitoring cycle are greater than the currently approved emission factors, the permittee shall adjust the rolling annual emissions calculations to reflect the increased emission factors for the 12-month period preceding completion of the most recent monitoring cycle. If the permittee provides justification for use of an alternate date to which emissions calculations should be adjusted to account for identified leaks, the adjustment may be made to that date instead of for the preceding 12-month period. Justification shall include such information as documentation of date and cause of leak, person reporting leak, and actions taken to repair the leak. The adjusted emission factors shall be used until the next monitoring cycle to quantify emissions from equipment/equipment components in HAP service.
- c. The application of emission factors for emission accounting purposes shall not apply during periods of non-operation of equipment subject to aHCl or organic HAP leak detection requirements in which the lines are drained and depressurized. Documentation shall be kept of the occurrence and duration of such events.

(9 VAC 5-80-110)

- 33. **Monitoring – Leak Emission Calculations** – To demonstrate compliance with Condition 14, the permittee shall utilize the emission factors developed in accordance with Condition 32.

(9 VAC 5-80-110)

- 34. **Monitoring – Emission Quantification – Abnormal Discharges** – The permittee shall quantify HAP emissions resulting from abnormal discharges. Such events shall include, but not be limited to, rupture of storage tanks, vessels, or piping, valve or coupling failure, industrial accidents, spills, etc. The quantification shall, to the extent possible, consider the magnitude and duration of the discharge and shall be included in the rolling monthly emissions calculations for individual and total HAPs. A log shall be kept documenting the occurrence and duration of such events, the resulting HAP emissions, and corrective action taken.

(9 VAC 5-80-110)

- 35. **Monitoring – Control Devices-less than one ton per year feed stream** – For control devices that control vent streams totaling less than 1 ton/yr HAP emissions before control, and for which control credit is taken in HAP emissions calculations, monitoring shall consist of a daily verification that the device is operating properly during any period in which the control device is functioning in achieving the HAP removal used in emission calculations. If the control device is used to control batch process vents alone or in combination with other streams, the verification may be on a per batch basis. This verification shall include, but not be limited to, a daily or per batch demonstration that the unit is working as designed and may include the daily measurements of the parameters described in Conditions 37 through 41.

(9 VAC 5-80-110)

36. **Monitoring – Control Devices-one ton per year or greater feed stream** – For each control device that controls vent streams containing equal to or greater than one ton per year HAPs, before controls, and for which control credit is taken in calculating HAP emissions, the permittee shall install and operate monitoring devices to allow tracking of operation within the established parameter levels. Monitoring parameters are specified for control scenarios in Conditions 37 through 41.

(9 VAC 5-80-110)

37. **Monitoring – Scrubbers** – For each scrubber controlling vent streams containing equal to or greater than one ton per year HAP emissions, before control, and for which control credit is taken in calculating HAP emissions, the permittee shall establish a minimum scrubber liquid flow rate or pressure drop as a site-specific operating parameter which must be measured and recorded every 15 minutes during the period in which the scrubber is functioning in achieving the HAP removal used in emissions calculations. If the scrubber uses a caustic solution to remove acid emissions, the permittee shall establish a minimum pH of the effluent scrubber liquid, as a site-specific operating parameter, or utilize manufacturers' specifications. This parameter must be monitored at least once a day during the period in which the scrubber is functioning in achieving the HAP removal used in emissions calculations. The minimum scrubber flowrate or pressure drop shall be based on the worst-case conditions anticipated for the scrubber.

- a. The monitoring device used to determine the pressure drop shall be certified by the manufacturer to be accurate to within a gage pressure of ± 10 percent of the maximum pressure drop measured.
- b. The monitoring device used for measurement of scrubber liquid flowrate shall be certified by the manufacturer to be accurate within ± 10 percent of the design scrubber liquid flowrate.
- c. The monitoring device shall be calibrated according to the monitoring device manufacturer's recommended calibration frequency or every two years, whichever is more stringent.

(9 VAC 5-80-110)

38. **Monitoring – Condensers** – For each condenser controlling vent streams containing equal to or greater than one ton per year HAP emissions, before control, and for which control credit is taken in calculating HAP emissions, the permittee shall establish the maximum condenser outlet gas temperature or the maximum condenser inlet coolant temperature or the maximum condenser outlet coolant temperature as a site-specific operating parameter which must be measured and recorded at least every 15 minutes during the period in which the condenser is functioning in achieving the HAP removal used in calculating emissions.

- a. The temperature monitoring device must be accurate to within ± 2 percent of the temperature measured in degrees Celsius or ± 2.5 °C, whichever is greater.
- b. The temperature monitoring device must be calibrated according to the monitoring device manufacturer's recommended calibration frequency or every two years, whichever is more stringent.

(9 VAC 5-80-110)

39. **Monitoring – Thermal oxidizers** – For each thermal oxidizer controlling vent streams containing equal to or greater than one ton per year HAP emissions before control, and for which control credit is taken in calculating HAP emissions, the permittee shall establish the minimum temperature of the gases exiting the combustion chamber as the site-specific operating parameter which must be measured and recorded at least once every 15 minutes during the period in which the combustion device is functioning in achieving the HAP removal used in emissions calculations.
- The temperature monitoring device must be accurate to within ± 0.75 percent of the temperature measured in degrees Celsius or ± 2.5 °C, whichever is greater.
 - The monitoring device must be calibrated according to the monitoring device manufacturer's recommended calibration frequency or every two years, whichever is more stringent.

(9 VAC 5-80-110)

40. **Monitoring – Carbon adsorbers (nonregenerative)** – For each carbon adsorber controlling vent streams containing equal to or greater than one ton per year HAP emissions before control, and for which control credit is taken in calculating HAP emissions, the permittee shall establish the operating time between replacement of the carbon adsorption media, based on worst-case conditions anticipated for the adsorber. The operating time since the last replacement of media shall be monitored and recorded.

(9 VAC 5-80-110)

41. **Monitoring – Carbon adsorbers (regenerative)** – For each carbon adsorber controlling vent streams containing equal to or greater than one ton per year HAP emissions before control, and for which control credit is taken in calculating HAP emissions, the permittee shall monitor and record once per regeneration cycle the following parameters: 1) total regeneration stream mass or volumetric flow during the carbon bed regeneration cycle(s), 2) temperature of carbon bed after regeneration, 3) temperature of carbon bed within 15 minutes of completing any cooling cycles, 4) operating time since the end of last regeneration. A check for bed poisoning shall be conducted yearly.
- The temperature monitoring device must be accurate to within ± 0.75 percent of the temperature measured in degrees Celsius or ± 2.5 °C, whichever is greater.
 - The monitoring device used for measurement of stream flow shall be certified by the manufacturer to be accurate within ± 10 percent of the design stream flowrate.
 - The monitoring devices must be calibrated according to the monitoring device manufacturer's recommended calibration frequency or every two years, whichever is more stringent.

(9 VAC 5-80-110)

42. **Monitoring – Alternative Monitoring** – As an alternative to the parameters specified in Conditions 37 through 41, the permittee may monitor and record the outlet HAP concentration, or both the outlet total organic compound concentration and outlet hydrogen halide and halogen concentration, every 15 minutes during the period in which the control device is functioning, and the outlet concentration shall be used in calculating HAP emissions. The permittee need not monitor the hydrogen halide and halogen concentration if, based on process knowledge, the owner or operator determines that the emission stream does not contain hydrogen halides or halogens.

(9 VAC 5-80-110)

43. **Monitoring – Averaging Periods** – Averaging periods for parametric monitoring levels shall be established according to (a) through (c) below.
- a. Except as provided in (c), a daily (24-hour) or block average shall be calculated as the average of all values for a monitored parameter level set according to the procedures in Conditions 44 and 45 recorded during the operating day or block.
 - b. The daily average may be from midnight to midnight or another continuous 24-hour period. The block average is limited to a period of time that is, at a maximum, equal to the time from the beginning to end of a batch process but not greater than 24 hours.
 - c. Monitoring values taken during periods in which the control devices are not functioning in controlling HAP emissions, as indicated by periods of no flow, shall not be considered in the averages. Where flow to the device could be intermittent, the permittee shall install, calibrate and operate a flow indicator at the inlet or outlet of the control device to identify periods of no flow or shall maintain documentation indicating time periods when HAPs are not being vented to the control device.

(9 VAC 5-80-110)

44. **Monitoring – Parameter Establishment without Testing** – For HAP control devices for which a performance test is not required by Condition 54 and for which control credit is taken in calculating HAP emissions, the parametric levels shall be set based on manufacturer's recommendations or a DEQ approved engineering assessment for control of HAP constituents under worst-case conditions expected for the control device. Compound-specific control efficiencies for individual HAPs corresponding to the chosen parameter levels may be established for a given control device based on manufacturer's recommendations or engineering assessment.

Existing HAP control devices listed in Table IV have been deemed to meet the criteria established above for parameter establishment without testing.

(9 VAC 5-80-110)

45. **Monitoring – Parameter Establishment with Testing** – For control devices for which a performance test is required by Condition 54, the parameter level must be established as follows:
- a. If the operating parameter level to be established is a minimum or maximum, it must be based on the average of the values from each of the three test runs.

- b. The owner or operator may establish the parametric monitoring level(s) based on the performance test supplemented by the DEQ approved engineering assessments and manufacturer's recommendations. Performance testing is not required to be conducted over the entire range of expected parameter values. The rationale for the specific level for each parameter, including any data and calculations used to develop the level(s) and a description of why the level indicates proper operation of the control device shall be provided in the report of test results submitted to DEQ, required by Condition 54.
- c. In determining parametric monitoring levels, the permittee shall perform intermediate calculations using at least three significant figures. However, the permittee may round the resultant parameter values to two significant figures in establishing appropriate values.

(9 VAC 5-80-110)

46. **Monitoring – Parameters for Control Devices Controlling Batch Process Vents** – For devices controlling batch process vents alone or in combination with other streams, the parameter level(s) shall be established in accordance with (a) and (b) below:
- a. If more than one batch emission episode has been selected to be controlled, a single level for the batch process(es) shall be determined from the initial compliance demonstration.
 - b. Instead of establishing a single level for the batch process(es), as described in (a) above, the permittee may establish separate levels for each batch emission episode, selected to be controlled. If separate monitoring levels are established, the permittee shall provide a record indicating at what point in the daily schedule or log of processes the parameter being monitored changes levels and must record at least one reading of the new parameter level, even if the duration of monitoring for the new parameter is less than 15 minutes.

(9 VAC 5-80-110)

47. **Monitoring – Request Approval to Monitor Alternative Parameters** – The permittee may request approval to monitor parameters other than those required by Conditions 37 through 41. The request shall be submitted in writing to DEQ. The alternative monitoring shall not be implemented prior to receiving approval from DEQ.

(9 VAC 5-80-110)

48. **Monitoring – Exceedances of Operating Parameters** – For each control device treating vent streams containing equal to or greater than one ton per year HAP emissions before controls, and for which control credit is taken in calculating HAP emissions, the permittee shall record the occurrence and duration of periods of operating parameter exceedances. HAP emission factors and/or calculations used to show compliance shall be adjusted to reflect such exceedance periods. An exceedance of an operating parameter is defined as one of the following:

- a. If the parameter, averaged over the operating day or block, is below a minimum value established during the initial performance test (supplemented as appropriate by engineering assessment or manufacturer's recommendation), or, prior to testing, by engineering assessment or manufacturer's recommendations.
- b. If the parameter, averaged over the operating day or block, is above the maximum value established during the initial performance test (supplemented as appropriate by engineering assessment or manufacturer's recommendation), or, prior to testing, by engineering assessment or manufacturer's recommendations.
- c. It shall not be considered an exceedance, and emission factors shall not be adjusted to reflect the exceedance, if the exceedance occurs during a time when HAPs are not being vented to the control device.

Exceedances of operating parameters occurring during a startup, shutdown, or malfunction do not constitute a violation of this permit provided HAP emission factors and/or calculations used to show compliance are adjusted to reflect such exceedance periods in accordance with this condition.

(9 VAC 5-80-110)

49. **Monitoring – Excursions** – For each control device treating vent streams containing equal to or greater than one ton per year HAP emissions, before controls, and for which control credit is taken in calculating HAP emissions, the permittee shall record the occurrence and duration of periods of operating parameter excursions. HAP emission factors and/or calculations shall be adjusted to reflect such excursion periods. Excursions are defined by either of the two cases listed in (a) or (b) below:
 - a. When the period of control device operation is 4 hours or greater in an operating day and monitoring data are insufficient to constitute a valid hour of data for at least 75 percent of the operating hours.
 - b. When the period of control device operation is less than 4 hours in an operating day and more than one of the hours during the period of operation does not constitute a valid hour of data due to insufficient monitoring data.
 - c. Monitoring data are insufficient to constitute a valid hour of data, as used in (a) and (b), if measured values are unavailable for any of the required 15-minute periods within the hour.
 - d. It shall not be considered an excursion, and emission factors shall not be adjusted to reflect the excursion, if the excursion occurs during a time when HAPs are not being vented to the control device.

As an alternative to adjusting HAP emission factors and/or calculations to reflect an excursion, the permittee may provide verification and documentation through independent means sufficient to establish that the control device was operating properly during the period that the monitoring system failed to collect data.

Operating parameter excursions occurring during startup, shutdown, or malfunction do not constitute a violation of this permit provided HAP emission factors and/or calculations used to show compliance are adjusted to reflect such excursion periods in accordance with this condition.

(9 VAC 5-80-110)

50. **Monitoring – Inspection and Monitoring of Waste Management Units and Treatment Processes** – For each wastewater tank, container, and individual drain system that receives, manages, or treats a wastewater stream or a residual removed from a wastewater stream (as defined in 40 CFR 63.1251), the permittee shall comply with the inspection requirements, as applicable, specified in Table V below.

Table V. Inspection and monitoring requirements for waste management units

Unit	Inspection or monitoring requirement	Frequency of inspection or monitoring	Method
Tanks	Inspect fixed roof and all openings for leaks, as applicable	Semiannually	Visual
	Inspect floating roof seal primary and secondary gaps, as applicable		
	Inspect wastewater tank for control equipment failures and improper work practices, as applicable		
	Inspect surface impoundment for control equipment failures and improper work practices, as applicable		
Containers having volume $\geq 0.1 \text{ m}^3$	Inspect cover and all openings for leaks, as applicable	Semiannually	Visual
	Inspect enclosure and all openings for leaks, as applicable		
	Inspect container for control equipment failures and improper work practices, as applicable		
Individual drain systems	Inspect cover and all openings to ensure there are no gaps, cracks, or holes, as applicable	Semiannually	Visual
	Inspect individual drain system for control equipment failures and improper work practices, as applicable		
	Verify that sufficient water is there to properly maintain integrity of water seals, as applicable		
	Inspect all drains using tightly fitted caps or plugs to ensure caps and plugs are in place and properly installed, as applicable		
	Inspect all junction boxes to ensure covers are in place and have no visible gaps, cracks, or holes, as applicable		
	Inspect unburied portion of all sewer lines for cracks and gaps, as applicable		

(9 VAC 5-80-110)

51. **Monitoring – Emissions calculations** – To show compliance with the limits in Condition 14, when HAP input values are based on Material Safety Data Sheets (MSDS) and the MSDS shows a HAP content as a range, the maximum range value shall be used in emission calculations.

(9 VAC 5-80-110)

52. **Monitoring – Wastewater treatment plant (WWTP) emission calculations**

- a. If actual sitewide HAP emissions are greater than or equal to 90% of the allowable sitewide HAP emissions in Condition 14, the permittee shall, upon the request of DEQ, calculate WWTP emissions for pre-aeration operations using the latest version of the WATER9 predictive model or shall conduct testing to verify TOXCHEM results.
- b. Annual emissions shall be calculated monthly as specified in Condition 14. Monthly average values for influent organic HAP (excluding ethylene glycol) concentrations for which removal credit in wastewater treatment will be taken shall be based on sampling and analysis at the WWTP influent as follows:
 - (1) Samples shall be collected and analyzed in accordance with DEQ-approved procedures.
 - (2) Individual organic HAPs (excluding ethylene glycol) from pharmaceutical manufacturing operations shall be sampled and analyzed at the WWTP influent on a daily basis in accordance with b(5) unless the given organic HAP-containing manufacturing operation did not discharge to the WWTP since the previous sample was collected.
 - (3) The permittee shall maintain records to document when sampling and analysis for specific organic HAPs are required at the WWTP influent in accordance with (b) above.
 - (4) Any organic HAP (excluding ethylene glycol) used in pharmaceutical manufacturing operations and discharged to the WWTP shall be assumed emitted to the atmosphere if not included in the sampling and analysis procedures.
 - (5) For instances where one or more daily influent concentration values are determined to be less than the specified limit of quantitation (LOQ), these values shall be treated as zeros in determining monthly average HAP concentrations at the WWTP influent. The monthly average HAP concentrations at the WWTP influent shall be calculated using all available data for the month including the defined zeros.

(9 VAC 5-80-110)

53. **Recordkeeping** – The permittee shall maintain records of all emissions data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with DEQ. These records shall include, but are not limited to:

- a. HAP emission factors used to calculate individual and total HAP emissions for each manufacturing process at the facility. Such emission factors shall be expressed as pounds of individual and total HAP emissions per production unit for each HAP-emitting manufacturing process at the facility. Adjustments to emission factors to reflect periods of control device parameter exceedances or excursions or periods during which the control device was not operated due to malfunction shall also be recorded for all periods during which HAPs are vented to the control devices.
- b. Site-specific emission factors for equipment/equipment components. Adjustments to equipment emission factors according to Condition 32 shall be recorded.
- c. Leaks not repaired within the time frames specified in Condition 25 shall be recorded.
- d. Records of abnormal discharges as required in Condition 34.
- e. Number of production units per month and year for each HAP-emitting manufacturing process at the facility.
- f. Monthly and annual calculations of individual and total HAP emissions resulting from all manufacturing processes at the facility (including Central Solvent Recovery). Annual emissions shall be calculated monthly as specified in Condition 14 for sitewide emissions. Calculations of emissions during periods of control device parameter exceedance and excursions or periods during which the control device was not operated due to malfunction at times when HAPs are vented shall be based on control equipment operation at the parametric values recorded during such exceedance or excursion periods or on uncontrolled emission factors.
- g. Monthly and annual calculations of individual and total HAP emissions resulting from equipment/equipment components. Annual emissions shall be calculated monthly as specified in Condition 14 for sitewide emissions. Emissions calculations shall be adjusted according to Condition 32.
- h. Monthly and annual calculations of individual and total HAP emissions resulting from wastewater treatment. Calculations shall be based on TOXCHEM modeling utilizing measured data for influent flow, influent temperature, and monthly average values for influent organic HAP (excluding thylene glycol) concentrations for which removal credit in wastewater treatment will be taken. Annual emissions shall be calculated monthly as specified in Condition 14 for sitewide emissions.
- i. Monthly and annual calculations of individual and total HAPs from miscellaneous sources, to include, but not limited to, sludge drying, abnormal discharges (according to Condition 34), stationary internal combustion engines, fugitives (e.g., cooling water towers and drum washing activities), lab hoods (using the site-specific emission factor(s) approved by DEQ pursuant to the letter dated April 25, 2006), boilers, gasoline tanks, and materials used in maintenance, repair, and construction activities (coatings, adhesives, lubricants, etc.). Annual emissions shall be calculated monthly as specified in Condition 14 for sitewide emissions.

- j. Material Safety Data Sheets (MSDS) for all HAP-containing raw materials received from third-party vendors and suppliers and used as feedstock to pharmaceutical production processes.
- k. Calibrations of wastewater influent concentration analyzer(s) (i.e., laboratory analytical equipment) and flow meter(s).
- l. The occurrence and duration of each period during which a control device for which control credit is taken in calculating HAP emissions was not operated.
- m. The occurrence and duration of each malfunction of continuous monitoring systems used on air pollution control equipment for which control credit is taken in calculating HAP emissions.
- n. Manufacturer's recommendation or engineering assessment showing control device parameters corresponding to proper operation as determined according to Condition 44.
- o. Performance test results showing control device parameters corresponding to proper operation as determined according to Condition 45.
- p. Daily verification of proper control device operation (in accordance with Condition 35), each measurement of a control device operating parameter monitored (in accordance with Conditions 37 through 41), and, as applicable, outlet HAP concentration or outlet total organic compound concentration (in accordance with Condition 42).
- q. For each continuous monitoring system used on air pollution control equipment for which control credit is taken in calculating HAP emissions, records documenting the completion of calibration checks and maintenance of continuous monitoring systems.
- r. All maintenance performed on the air pollution control equipment for which control credit is taken in calculating HAP emissions.
- s. For each control device listed in Condition 15 and Table IV, a record documenting periods, lasting more than one hour, during which the control device is not operating and the passing vent stream contains HAPs and records of the durations of periods of flow through bypass routes as specified in Condition 18.
- t. A record that each waste management unit inspection required by Condition 50 and Table V was performed, as applicable.
- u. Records of initial and subsequent leak detection inspections performed in accordance with Conditions 20 and 22.
- v. For each inspection conducted in accordance with Conditions 20 and 22 during which no leaks are detected:
 - (1) The date of the inspection.
 - (2) Identification of the equipment inspected.

- (3) A statement that no leaks were detected.
- w. For each inspection conducted in accordance with Conditions 20 and 22 during which a leak is detected:
 - (1) Identification of the leaking equipment.
 - (2) The instrument identification numbers and operator name or initials, if the leak was detected using methods specified in Conditions 20 and 22, or a record that the leak was detected by sensory observations.
 - (3) The date the leak was detected and the date of the first attempt to repair the leak.
 - (4) Maximum instrument reading measured by the methods specified in Conditions 20 and 22 after the leak is successfully repaired or determined to be nonrepairable.
 - (5) "Repair delayed" and the reason for the delay if a leak is not repaired within 15 in-service calendar days after discovery of the leak (according to Condition 25).
 - (6) The expected date of successful repair of the leak if a leak is not repaired within 15 in-service calendar days.
 - (7) The date of successful repair of the leak.
- x. List of all equipment designated as "unsafe to monitor," the reason for such designation, and the written plan specifying when inspections will be performed (according to Condition 27).
- y. List of all equipment designated "difficult to monitor", the reason for such designation, and the written plan specifying periodic inspections (according to Condition 28).
- z. List of all equipment designated as "inaccessible to monitor" and the reason for such designation (according to Condition 29).
- aa. Lists/records (such as piping and instrumentation diagrams) documenting equipment not meeting the definition of "in organic HAP service" or "in aHCl service" (according to Conditions 30 and 31).
- bb. For each nonregenerative carbon adsorber, operating time elapsed between replacement of adsorption media.
- cc. For each regenerative carbon adsorber, values of parameters identified in Condition 41, at least once per regeneration cycle.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110)

54. **Testing** – Within 180 days of either (1) installation of a new or replacement control device treating a gas stream containing equal to or greater than five tons per year HAP emissions or (2) beginning to take HAP control credit in calculating emissions for a unit controlling equal to or greater than five tons per year HAP emissions for which no control credit was previously taken, the permittee shall conduct performance testing according to EPA reference methods to determine the control efficiency of the device for the HAP comprising the highest concentration in the stream. Control efficiencies of each control device for additional HAPs may be determined using EPA reference methods and used in subsequent calculations. This requirement may be waived for a control device if the device was tested within the most recent five years, upon approval of such waiver by DEQ. Testing shall be conducted under conditions which are most challenging for the control device; such conditions may be maximum pollutant loading to the device or other loading scenarios reasonably expected to occur that may be more challenging to the unit than maximum load. Test results, supplemented as appropriate by engineering assessment or manufacturer's recommendations, shall be used to determine appropriate control device operating parameters necessary to achieve maximum control efficiency.
(9 VAC 5-80-110)
55. **Testing** – If testing is conducted in addition to the monitoring specified in the permit, the permittee shall use the appropriate method(s) in accordance with the procedures approved by the DEQ.
(9 VAC 5-80-110)
56. **Reporting** – For each quarterly period ending March 31, June 30, September 30, and December 31, the permittee shall report to DEQ, the rolling 12-month total HAP emissions (individual and in the aggregate) as of the end of each quarter. Reports shall be submitted no later than 60 days after the end of each quarter.
(9 VAC 5-80-110)
57. **Reporting** – The permittee shall furnish written notification to DEQ of shutdown or malfunctions lasting more than 15 minutes of control equipment listed in Table IV (Condition 15) which result(s) in HAP emissions exceeding 10 pounds. During shutdown or malfunction periods, a log shall be maintained documenting the expected presence of HAPs in the vent stream and any equivalent alternative control device receiving the stream. The permittee shall provide a written statement giving all pertinent facts, including the duration of the breakdown, the HAP emissions resulting from the downtime and the emission factor adjustment, within 14 days of the occurrence.
(9 VAC 5-80-110)
58. **Reporting** – The permittee shall furnish notification to DEQ of significant modifications and significant new installations.
- a. Significant modifications for the purposes of this condition are defined as changes to an existing process unit that result in an increase of the potential emissions of the process unit after consideration of existing controls of more than any of the following significance levels.

- (1) An increase in emissions of any individual HAP greater than or equal to one ton/year;
 - (2) An increase in emissions of total HAPs greater than or equal to 2.5 tons/year;
 - (3) Emissions of an individual HAP not previously emitted by the process unit greater than or equal to one ton/year.
- b. Significant new installations for the purposes of this condition are defined as new process units with potential emissions before controls that exceed either of the following significance levels:
- (1) Emissions of any individual HAP greater than or equal to one ton/year;
 - (2) Emissions of total HAPs greater than or equal to 2.5 tons/year.
- c. Potential emissions means process unit point source emissions that would be generated by the process unit operating at its maximum capacity.
- d. The notification shall be in writing and shall be submitted within 45 days of the commencement of operation. The notification shall include the following information:
- (1) A description of the new or modified equipment, to include a schematic diagram showing the type and sequence of equipment installed or modified, equipment identification numbers, location of the new installation or modification on the plant site;
 - (2) Air pollution control equipment associated with the new installation or modification;
 - (3) The total emissions of each HAP emitted from each piece of new or modified equipment (before and after controls);
 - (4) Changes in emission factors for each HAP emitted (expressed as lbs HAP per production unit) resulting from the new installation or modification; and
 - (5) For modifications, a statement addressing the effect that the modification will have on the performance of existing air pollution control equipment.

(9 VAC 5-80-110)

Powerhouse Emission Limits

59. **Limitations - MACT JJJJJJ** – For each boiler (Ref. B-4, B-7, and B-8), the permittee shall comply with the applicable standards in 40 CFR 63.11201, and with each applicable work practice standard, emission reduction measure, and management practice specified in Table 2 to 40 CFR 63, Subpart JJJJJJ. The permittee must conduct an initial tune-up of each boiler as specified in 40 CFR 63.11214 and conduct a tune-up of each boiler each five years as specified in 40 CFR 63.11223 (c).
(9 VAC 5-80-110, 40 CFR 63.11201, and Table 2 to 40 CFR 63, Subpart JJJJJJ)
60. **Limitations - MACT JJJJJJ** - For each boiler (Ref. B-4, B-7, and B-8), the permittee shall comply with the applicable requirements of the General Provisions, as outlined in Table 8 to 40 CFR 63, Subpart JJJJJJ.
(9 VAC 5-80-110 and 40 CFR 63.11235)
61. **Limitations - MACT JJJJJJ** - For each boiler (Ref. B-4, B-7, and B-8), the permittee shall comply with the applicable general compliance requirements in 40 CFR 63.11205. At all times the permittee must operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to the DEQ that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
(9 VAC 5-80-110 and 40 CFR 63.11205)
62. **Monitoring - MACT JJJJJJ** - For each boiler (Ref. B-4, B-7, and B-8), the permittee shall comply with the applicable continuous compliance requirements in 40 CFR 63.11223, as follows:
- a. The permittee must conduct a performance tune-up according to paragraph (b) of this Condition and keep records as required in 40 CFR 63.11225(c) to demonstrate continuous compliance. The permittee must conduct the tune-up while burning the type of fuel that provided the majority of the heat input to the boiler over the 12 months prior to the tune-up.
 - b. For each boiler with an oxygen trim system that maintains an optimum air-to-fuel ratio (Ref. B-4, B-7, and B-8), the permittee must conduct a tune-up of the boiler every five years to demonstrate continuous compliance as specified in paragraphs (b)(1) through (7) of this Condition. Each five year tune-up must be conducted no more than 61 months after the previous tune-up.
 - (1) As applicable, inspect the burner, and clean or replace any components of the burner as necessary. The permittee may delay the burner inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection.

- (2) Inspect the flame pattern, as applicable, and adjust the burner as necessary to optimize the flame pattern. The adjustment should be consistent with the manufacturer's specifications, if available.
- (3) Inspect the system controlling the air-to-fuel ratio, as applicable, and ensure that it is correctly calibrated and functioning properly. The permittee may delay the inspection until the next scheduled unit shutdown, not to exceed 36 months from the previous inspection.
- (4) Optimize total emissions of CO. This optimization should be consistent with the manufacturer's specifications, if available, and with any nitrogen oxide requirement to which the unit is subject.
- (5) Measure the concentrations in the effluent stream of CO in parts per million, by volume, and oxygen in volume percent, before and after the adjustments are made (measurements may be either on a dry or wet basis, as long as it is the same basis before and after the adjustments are made). Measurements may be taken using a portable CO analyzer.
- (6) Maintain on-site and submit, if requested by the DEQ, a report containing the information in paragraphs b.6.(a) through (c) of this section.
 - (a) The concentrations of CO in the effluent stream in parts per million, by volume, and oxygen in volume percent, measured at high fire or typical operating load, before and after the tune-up of the boiler.
 - (b) A description of any corrective actions taken as a part of the tune-up of the boiler.
 - (c) The type and amount of fuel used over the 12 months prior to the tune-up of the boiler, but only if the unit was physically and legally capable of using more than one type of fuel during that period. Units sharing a fuel meter may estimate the fuel use by each unit.
- (7) If the unit is not operating on the required date for a tune-up, the tune-up must be conducted within 30 days of startup.

(9 VAC 5-80-110 and 40 CFR 63.11223)

63. **Notification, Reporting, and Recordkeeping - MACT JJJJJJ** - For each boiler (Ref. B-4, B-7, and B-8), the permittee shall comply with the applicable notification, reporting, and recordkeeping requirements in 40 CFR 63.11225, as follows:

- a. The permittee must submit the notifications specified in paragraphs (a)(1) through (3) of this section.
 - (1) The permittee must submit all of the notifications in 40 CFR 63.7(b); 63.8(e) and (f); and 63.9(b) through (e), (g), and (h) that apply to the permittee by the dates specified in those sections except as specified in paragraphs (a)(2) of this section.

- (2) The permittee must submit the Notification of Compliance Status no later than 120 days after the applicable compliance date specified in 40 CFR 63.11196. The permittee must submit the Notification of Compliance Status in accordance with paragraphs (a)(2)(i) and (iv) of this condition. The Notification of Compliance Status must include the information and certification(s) of compliance in paragraphs (a)(2)(i) through (iii) of this condition, as applicable, and signed by a responsible official.
- (i) The permittee must submit the information required in 40 CFR 63.9(h)(2), except the information listed in 40 CFR 63.9(h)(2)(i)(B), (D), (E), and (F).
 - (ii) “This facility complies with the requirements in 40 CFR 63.11214 to conduct an initial tune-up of the boiler.”
 - (iii) “This facility has had an energy assessment performed according to § 63.11214(c).”
 - (iv) For units that do not qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act: “No secondary materials that are solid waste were combusted in any affected unit.”
 - (v) The notification must be submitted electronically using the Compliance and Emissions Data Reporting Interface (CEDRI) that is accessed through EPA’s Central Data Exchange (CDX) (www.epa.gov/cdx). However, if the reporting form specific to this subpart is not available in CEDRI at the time that the report is due, the written Notification of Compliance Status must be submitted to the DEQ.
- b. The permittee must prepare, by March 1 of each year, and submit to the DEQ upon request, an annual compliance certification report for the previous calendar year containing the information specified in paragraphs (b)(1) through (3) of this condition. The permittee must submit the report by March 15 if you had any instance described by paragraph (b)(3) of this condition. For boilers that are subject only to a requirement to conduct a biennial or 5-year tune-up according to § 63.11223(a) and not subject to emission limits or operating limits, the permittee may prepare only a biennial or 5-year compliance report as specified in paragraphs (b)(1) and (2) of this condition.
- (1) Company name and address.
 - (2) Statement by a responsible official, with the official's name, title, phone number, email address, and signature, certifying the truth, accuracy and completeness of the notification and a statement of whether the source has complied with all the relevant standards and other requirements 40 CFR 63 Subpart JJJJJ. The permittee’s notification must include the following certification(s) of compliance, as applicable, and be signed by a responsible official:
 - (i) “This facility complies with the requirements in 40 CFR 63.11223 to conduct a biennial or 5-year tune-up, as applicable, of each boiler.”

- (ii) For units that do not qualify for a statutory exemption as provided in section 129(g)(1) of the Clean Air Act: “No secondary materials that are solid waste were combusted in any affected unit.”
- (3) If the source experiences any deviations from the applicable requirements during the reporting period, include a description of deviations, the time periods during which the deviations occurred, and the corrective actions taken.
- c. The permittee must maintain the records specified in paragraphs (1) through (4) of this Condition.
 - (1) As required in 40 CFR 63.10(b)(2)(xiv), the permittee must keep a copy of each notification and report that the permittee submitted to comply with 40 CFR 63 Subpart JJJJJ and all documentation supporting any Initial Notification or Notification of Compliance Status that the permittee submitted.
 - (2) The permittee must keep records to document conformance with the work practices, emission reduction measures, and management practices required by 40 CFR 63.11214 and 40 CFR 63.11223 as specified in paragraphs c.2.(i) through (iii) of this condition.
 - (i) Records must identify each boiler, the date of tune-up, the procedures followed for tune-up, and the manufacturer's specifications to which the boiler was tuned.
 - (ii) A copy of the energy assessment report.
 - (3) Records of the occurrence and duration of each malfunction of the boiler, or of the associated air pollution control and monitoring equipment .
 - (4) Records of actions taken during periods of malfunction to minimize emissions in accordance with the general duty to minimize emissions in § 63.11205(a), including corrective actions to restore the malfunctioning boiler, air pollution control, or monitoring equipment to its normal or usual manner of operation.
- d. The permittee’s records must be in a form suitable and readily available for expeditious review. The permittee must keep each record for five years following the date of each recorded action.
- e. If the permittee has switched fuels or made a physical change to the boiler and the fuel switch or change resulted in the applicability of a different subcategory within 40 CFR 63Subpart JJJJJ, in the boiler becoming subject to Subpart JJJJJ, or in the boiler switching out of Subpart JJJJJ due to a change to 100 percent natural gas, or the permittee has taken a permit limit that resulted in you being subject to Subpart JJJJJ, the permittee must provide notice of the date upon which the permittee switched fuels, made the physical change, or took a permit limit within 30 days of the change. The notification must identify:

(1) The name of the owner or operator of the affected source, the location of the source, the boiler(s) that have switched fuels, were physically changed, or took a permit limit, and the date of the notice.

(2) The date upon which the fuel switch, physical change, or permit limit occurred.

(9 VAC 5-80-110 and 40 CFR 63.11225)

Reciprocating Internal Combustion Engines (RICE)

As used in the Reciprocating Internal Combustion Engine (RICE) Section of the permit, the classifications “MACT Group 1, MACT Group 2, MACT Group 3, MACT Group 4, MACT Group 5, MACT Group 6, MACT Group 7, MACT Group 8, and MACT Group 9” refer to the generator groupings provided in Attachment C of the permit.

64. **Limitations** - The stationary RICE (Ref. MACT Group 6) must meet the requirements of 40 CFR 63 Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart IIII. Except where this permit is more restrictive, the stationary RICE (Ref. MACT Group 6) shall be operated in compliance with the requirements of 40 CFR 60, Subpart IIII.
(9 VAC 5-80-110, 40 CFR 63.6590(c), and 40 CFR 60 Subpart IIII)
65. **Limitations** – The stationary RICE (Ref. MACT Group 7, MACT Group 8, and MACT Group 9) must meet the requirements of 40 CFR 63 Subpart ZZZZ by meeting the requirements of 40 CFR 60, Subpart JJJJ. Except where this permit is more restrictive, the stationary RICE (Ref. MACT Group 7, MACT Group 8, and MACT Group 9) shall be operated in compliance with the requirements of 40 CFR 60, Subpart JJJJ.
(9 VAC 5-80-110, 40 CFR 63.6590(c), and 40 CFR 60 Subpart JJJJ)
66. **Limitations** – The stationary RICE (Ref. MACT Group 1, and MACT Group 4) shall comply with the maintenance requirements specified in sections 4 (a) through (c) of Table 2d to Subpart ZZZZ:
- a. Change oil and filter every 500 hours of operation or annually, whichever comes first, or at an extended frequency if utilizing an oil analysis program as described in §63.6625(i), and Condition 69;
 - b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first and replace as necessary; and
 - c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

If the stationary RICE is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required above, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. In accordance with Condition 115, sources must report any failure to perform the management practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

(9 VAC 5-80-110, 40 CFR 63.6603 (a), 40 CFR 63.6625 (i), and Table 2d (footnote 2) to 40 CFR 63, Subpart ZZZZ)

67. **Limitations** - The stationary RICE (Ref. MACT Group 2) shall comply with the maintenance requirements specified in sections 5 (a) through (c) of Table 2d to Subpart ZZZZ:

- a. Change oil and filter every 500 hours of operation or annually, whichever comes first, or at an extended frequency if utilizing an oil analysis program as described in §63.6625 (j) and Condition 70.
- b. Inspect spark plugs every 1,000 hours of operation or annually, whichever comes first, and replace as necessary; and
- c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

If the stationary RICE is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required above, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. In accordance with Condition 110, sources must report any failure to perform the management practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.

(9 VAC 5-80-110, 40 CFR 63.6603(a), 40 CFR 63.6625 (j), and Table 2d (footnote 2) to 40 CFR 63, Subpart ZZZZ)

68. **Limitations** - The stationary RICE (Ref. MACT Group 3) shall comply with the maintenance requirements specified in sections 1 (a) through (c) of Table 2d to Subpart ZZZZ:

- a. Change oil and filter every 1,000 hours of operation or annually, whichever comes first, or at an extended frequency if utilizing an oil analysis program as described in §63.6625(i) and Condition 70;
- b. Inspect air cleaner every 1,000 hours of operation or annually, whichever comes first and replace as necessary; and
- c. Inspect all hoses and belts every 500 hours of operation or annually, whichever comes first, and replace as necessary.

During periods of startup the permittee must minimize the engine's time spent at idle and minimize the engine's startup time at startup to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.

(9 VAC 5-80-110, 40 CFR 63.6603(a), 40 CFR 63.6625 (i), and Table 2d to 40 CFR 63, Subpart ZZZZ)

69. **Limitations** – The permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Condition 66 or Condition 68, as applicable. The oil analysis must be performed at the same frequency specified for changing the oil in Condition 66 or Condition 68, as applicable. The analysis program must at a minimum analyze the following three parameters: Total Base Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Base Number is less than 30 percent of the Total Base Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the permittee is not required to change the oil. If any of the limits are exceeded, the permittee must change the oil within two business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within two business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.
- (9 VAC 5-80-110 and 40 CFR 63.6625 (i))

70. **Limitations** – The permittee has the option of utilizing an oil analysis program in order to extend the specified oil change requirement in Condition 67. The oil analysis must be performed at the same frequency specified for changing the oil in Condition 67. The analysis program must at a minimum analyze the following three parameters: Total Acid Number, viscosity, and percent water content. The condemning limits for these parameters are as follows: Total Acid Number increases by more than 3.0 milligrams of potassium hydroxide (KOH) per gram from Total Acid Number of the oil when new; viscosity of the oil has changed by more than 20 percent from the viscosity of the oil when new; or percent water content (by volume) is greater than 0.5. If all of these condemning limits are not exceeded, the engine owner or operator is not required to change the oil. If any of the limits are exceeded, the engine owner or operator must change the oil within two business days of receiving the results of the analysis; if the engine is not in operation when the results of the analysis are received, the engine owner or operator must change the oil within two business days or before commencing operation, whichever is later. The owner or operator must keep records of the parameters that are analyzed as part of the program, the results of the analysis, and the oil changes for the engine. The analysis program must be part of the maintenance plan for the engine.
- (9 VAC 5-80-110 and 40 CFR 63.6625(j))

71. **Limitations** – If the stationary RICE (MACT Group 5) is not equipped with a closed crankcase ventilation system, the permittee must comply with either Condition 71.a or Condition 71.b below. Owners and operators must follow the manufacturer's specified maintenance requirements for operating and maintaining the open or closed crankcase ventilation systems and replacing the crankcase filters, or can request the Administrator to approve different maintenance requirements that are as protective as manufacturer requirements.
- a. Install a closed crankcase ventilation system that prevents crankcase emissions from being emitted to the atmosphere, or.

- b. Install an open crankcase filtration emission control system that reduces emissions from the crankcase by filtering the exhaust stream to remove oil mist, particulates and metals.

(9 VAC 5-80-110 and 40 CFR 63.6625 (g))

- 72. **Limitations** – If the stationary RICE (MACT Group 1 and MACT Group 4) operates for the purpose specified in Condition 74.b(1) through 74.b(5), the stationary RICE must use diesel fuel with a sulfur content of no greater than 15 parts per million (0.0015%), except that any existing diesel fuel purchased (or otherwise obtained) prior to January 1, 2015, may be used until depleted.

(9 VAC 5-80-110 and 40 CFR 63.6604 (b))

- 73. **Limitations** – During periods of startup the permittee must minimize the time spend at idle for the stationary RICE (Ref. MACT Group 1, MACT Group 2, MACT Group 3, MACT Group 4, and MACT Group 5) and minimize the engine's startup time to a period needed for appropriate and safe loading of the engine, not to exceed 30 minutes, after which time the non-startup emission limitations apply.

(9 VAC 5-80-110, 40 CFR 63.6625 (h), and 40 CFR 63 Subpart ZZZZ)

- 74. **Limitations** – The permittee must operate each stationary RICE (Ref. MACT Group 1, MACT Group 2, MACT Group 4, MACT Group 6, MACT Group 9) according to the requirements of this Condition. In order for the engine to be considered an emergency stationary RICE, any operation other than: emergency operation, maintenance and testing, emergency demand response, and operation in non-emergency situations as described in this Condition, is prohibited. If you do not operate the engine according to the requirements in this Condition, the engine will not be considered an emergency engine under 40 CFR 60 Subpart IIII, 40 CFR 60 Subpart JJJJ, or 40 CFR 63 Subpart ZZZZ and must meet all requirements for non-emergency engines:

- a. You may operate your emergency stationary RICE for a maximum of 100 hours per calendar year for the following non-emergency situations; Any operation for non-emergency situations as allowed by (b) of this Condition counts as part of the 100 hours per calendar year:
 - (1) Emergency stationary RICE may be operated for maintenance checks and readiness testing, provided that the tests are recommended by federal, state or local government, the manufacturer, the vendor, the regional transmission organization or equivalent balancing authority and transmission operator, or the insurance company associated with the engine.
 - (2) The owner or operator may petition DEQ for approval of additional hours to be used for maintenance checks and readiness testing, but a petition is not required if the owner or operator maintains records indicating that federal, state, or local standards require maintenance and testing of emergency RICE beyond 100 hours per calendar year.

- b. Emergency stationary RICE may be operated for up to 50 hours per calendar year for non-emergency situations to supply power as part of a financial arrangement with another entity if all of the following conditions are met:
- (1) The engine is dispatched by the local balancing authority or local transmission and distribution system operator.
 - (2) The dispatch is intended to mitigate local transmission and/or distribution limitations so as to avert potential voltage collapse or line overloads that could lead to the interruption of power supply in a local area or region.
 - (3) The dispatch follows reliability, emergency operation or similar protocols that follow specific NERC, regional, state, public utility commission or local standards or guidelines.
 - (4) The power is provided only to the facility itself or to support the local transmission and distribution system.
 - (5) The owner or operator identifies and records the entity that dispatches the engine and the specific NERC, regional, state, public utility commission or local standards or guidelines that are being followed for dispatching the engine. The local balancing authority or local transmission and distribution system operator may keep these records on behalf of the engine owner or operator.

The 50 hours of operation in non-emergency situations are counted as part of the 100 hours per calendar year for maintenance and testing and emergency demand response provided in paragraph.(a) of this Condition. The 50 hours per year for non-emergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

(9 VAC 5-80-110, 40 CFR 63.6640 (f), 40 CFR 60.4211 (f), and 40 CFR 60.4243 (d))

75. **Limitations** – The stationary RICE (Ref. MACT Group 5) shall comply with the requirements specified in sections 3 (a) and (b) of Table 2d to Subpart ZZZZ except during periods of startup:
- a. Limit the concentration of CO in the stationary RICE exhaust to 23 ppmvd at 15 percent O₂; or
 - b. Reduce CO emissions by 70 percent or more.

(9 VAC 5-80-110, 40 CFR 63.6603 (a), and 40 CFR 63, Subpart ZZZZ)

76. **Limitations** – The stationary RICE (Ref. MACT Group 5) complying with the requirement to limit or reduce the concentration of CO in the stationary RICE exhaust and using an oxidation catalyst must meet the following operating limitations specified in sections 2 (a) and b) of Table 2b to Subpart ZZZZ, except during periods of startup:

- a. Maintain your catalyst so that the pressure drop across the catalyst does not change by more than 2 inches of water from the pressure drop across the catalyst that was measured during the initial performance test; and
- b. Maintain the temperature of your stationary RICE exhaust so that the catalyst inlet temperature is greater than or equal to 450 °F and less than or equal to 1,350 °F.

(9 VAC 5-80-110, 40 CFR 63.6603 (a), and 40 CFR 63, Subpart ZZZZ)

77. **Limitations** – The approved fuel for the stationary RICE (Ref. MACT Group 5 and MACT Group 6) is diesel fuel with a sulfur content of no greater than 15 parts per million (0.0015%).

(9 VAC 5-80-110, 40 CFR 63.6604 (a), and 40 CFR 60.4207)

78. **Limitations** - Emissions from the operation of the stationary RICE in MACT Group 6 shall not exceed the limits specified below:

	<u>Unit PH-2</u>	<u>Units CB-15, CB-17, CB-21 & CB-22</u>
Non-Methane Hydrocarbons (NMHC) + NO _x	4.0 g/kW-hr	7.5 g/kW-hr
CO	5.0 g/kW-hr	5.5 g/kW-hr
PM	0.30 g/kW-hr	0.30 g/kW-hr

The engines must be installed and configured according to the manufacturer's emission-related specifications. Compliance with these emission limits may be determined by keeping records of engine manufacture data indicating compliance with these emission limits.

(9 VAC 5-80-110 and 40 CFR 60.4205(b))

79. **Limitations** - Emissions from the operation of each of the stationary RICE in MACT Group 7 and MACT Group 8 shall not exceed the limits specified below:

	<u>Units CNG-1 and CNG-2</u>
NO _x	1.0 g/HP-hr 82 ppmvd at 15% O ₂
CO	2.0 g/HP-hr 270 ppmvd at 15% O ₂
VOC	0.7 g/HP-hr 60 ppmvd at 15% O ₂

Compliance with these emission limits may be determined by keeping records of engine manufacturing data or performance testing indicating compliance with these emission limits. The permittee may choose to comply with the emission standards in units of either g/HP-hr or ppmvd at 15% oxygen. The permittee must operate and maintain the stationary RICE over the entire life of each engine.

(9 VAC 5-80-110, 40 CFR 60.4233(e), Table 1 to 40 CFR 60 Subpart JJJJ, and 40 CFR 60.4234)

80. **Limitations** - Emissions from the operation of each of the stationary RICE in MACT Group 9 shall not exceed the limits specified below:

	<u>Unit IG-1</u>
NO _x + Hydrocarbons (HC)	10 g/HP-hr
CO	387 g/HP-hr

The permittee must operate and maintain the stationary RICE over the entire life of each engine. If the permittee does not operate and maintain the certified stationary RICE and control device in MACT Group 9 according to the manufacturer's emission-related written instructions, the engine will be considered a non-certified engine, and the permittee must demonstrate compliance by keeping a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions, but no performance testing is required if you are an owner or operator..

(9 VAC 5-80-110, 40 CFR 60.4233(d), Table 1 to 40 CFR 60 Subpart JJJJ, 40 CFR 60.4243(a)(2)(i))

81. **Limitations** – For the stationary RICE (MACT Group 6) the permittee must:
- Operate and maintain the stationary RICE and control device according to the manufacturer's emission-related written instructions (or procedures developed by the permittee that are approved by the manufacturer) over the entire life of the engine;
 - Change only those emission-related settings that are permitted by the manufacturer; and
 - Meet the requirements of 40 CFR parts 89, 94, and/or 1068, as applicable.

(9 VAC 5-80-110, 40 CFR 60.4206, and 40 CFR 60.4211(a))

82. **Limitations** – The stationary SI natural gas fired engines in MACT Group 7, MACT Group 8, or MACT Group 9 may operate using propane for a maximum of 100 hours per year as an alternative fuel solely during emergency operations, but must keep records of such use. If propane is used for more than 100 hours per year in an engine that is not certified to the emission standards when using propane, the owners and operators are required to conduct a performance test to demonstrate compliance with the applicable emission standards in 40 CFR 60.4233.

(9 VAC 5-80-110 and 40 CFR 60.4243(e))

83. **Monitoring** - The permittee must be in compliance with the emission limitations, operating limitations, and other requirements that apply to the stationary RICE (Ref. MACT Group 1, MACT Group 2, MACT Group 3, MACT Group 4, and MACT Group 5) at all times. At all times the permittee must operate and maintain the stationary RICE (Ref. MACT Group 1, MACT Group 2, MACT Group 3, MACT Group 4, and MACT Group 5), including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. The general duty to minimize emissions does not require the permittee to make any further efforts to reduce emissions if levels required by this standard have been achieved. Determination of whether such operation and maintenance procedures are being used will be based on information available to DEQ which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
(9 VAC 5-80-110, 40 CFR 63.6605 (a), and 40 CFR 63.6605 (b))
84. **Monitoring** – The permittee shall install non-resettable hour meter on the stationary RICE (Ref. MACT Group 1, MACT Group 2, and MACT Group 4). The hour meter shall be provided with adequate access for inspection.
(9 VAC 5-80-110 and 40 CFR 63.6625 (f))
85. **Monitoring** – The permittee shall install non-resettable hour meter on the stationary RICE (Ref. MACT Group 6 and MACT Group 9). The hour meter shall be provided with adequate access for inspection.
(9 VAC 5-80-110)
86. **Monitoring** – The permittee must operate and maintain the stationary RICE (Ref. MACT Group 1, MACT Group 2, MACT Group 3, and MACT Group 4) and after-treatment control device (if any) according to the manufacturer's emission related written instructions or develop a maintenance plan which must provide to the extent practicable for the maintenance and operation of the engine in a manner consistent with good air pollution control practice for minimizing emissions.
(9 VAC 5-80-110, 40 CFR 63.6625 (e), 40 CFR 63.6640, and 40 CFR 63 Subpart ZZZZ Table 6)
87. **Monitoring** – The permittee shall monitor and collect data to demonstrate continuous compliance for the stationary RICE (MACT Group 5) in accordance with the following:
- a. Except for monitor malfunctions, associated repairs, required performance evaluations, and required quality assurance or control activities, the permittee must monitor continuously at all times that the stationary RICE is operating. A monitoring malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring to provide valid data. Monitoring failures that are caused in part by poor maintenance or careless operation are not malfunctions.
 - b. The permittee may not use data recorded during monitoring malfunctions, associated repairs, and required quality assurance or control activities in data averages and calculations used to report emission or operating levels. You must, however, use all the valid data collected during all other periods.

(9 VAC 5-80-110 and 40 CFR 63.6635)

88. **Monitoring** – The permittee shall demonstrate continuous compliance with the requirement to reduce CO emissions in the stationary RICE (Ref. MACT Group 5) exhaust using an oxidation catalyst by:

- a. Conducting performance tests for CO every 8,760 hours or 3 years, whichever comes first, to demonstrate that the required CO percent reduction is achieved, or that your emissions remain at or below the CO concentration limit;
- b. Collecting the catalyst inlet temperature data according to 40 CFR 63.6625(b) and Condition 89;
- c. Reducing these data to 4-hour rolling averages;
- d. Maintaining the 4-hour rolling averages within the operating limitations for the catalyst inlet temperature; and
- e. Measuring the pressure drop across the catalyst once per month and demonstrating that the pressure drop across the catalyst is within the operating limitation established during the performance test.

(9 VAC 5-80-110, 40 CFR 63.6640 (a), and Table 6 to 40 CFR 63 Subpart ZZZZ)

89. **Monitoring** – The permittee shall install a continuous parameter monitoring system (CPMS) on the stationary RICE (Ref. MACT Group 5). The permittee shall install, operate, and maintain each CPMS according to the requirements in a through f:

- a. The permittee must prepare a site-specific monitoring plan that addresses the monitoring system design, data collection, and the quality assurance and quality control elements outlined in paragraphs (1) through (5) of this condition and in 40 CFR 63.8(d). As specified in 40 CFR 63.8(f)(4), the permittee may request approval of monitoring system quality assurance and quality control procedures alternative to those specified in a through e of this condition in the permittee's site-specific monitoring plan.
 - (1) The performance criteria and design specifications for the monitoring system equipment, including the sample interface, detector signal analyzer, and data acquisition and calculations;
 - (2) Sampling interface (*e.g.*, thermocouple) location such that the monitoring system will provide representative measurements;
 - (3) Equipment performance evaluations, system accuracy audits, or other audit procedures;
 - (4) Ongoing operation and maintenance procedures in accordance with provisions in 40 CFR 63.8(c)(1)(ii) and 40 CFR 63.8(c)(3); and

- (5) Ongoing reporting and recordkeeping procedures in accordance with provisions in 40 CFR 63.10(c), 40 CFR 63.10(e)(1), and 40 CFR 63.10(e)(2)(i).
- b. The permittee must install, operate, and maintain each CPMS in continuous operation according to the procedures in the permittee's site-specific monitoring plan.
- c. The CPMS must collect data at least once every 15 minutes.
- d. For a CPMS for measuring temperature range, the temperature sensor must have a minimum tolerance of 2.8 degrees Celsius (5 degrees Fahrenheit) or 1 percent of the measurement range, whichever is larger.
- e. The permittee must conduct the CPMS equipment performance evaluation, system accuracy audits, or other audit procedures specified in the permittee's site-specific monitoring plan at least annually.
- f. The permittee must conduct a performance evaluation of each CPMS in accordance with the permittee's site-specific monitoring plan.

(9 VAC 5-80-110 and 40 CFR 63.6625 (b))

90. **Monitoring** – If the permittee does not install, configure, operate, and maintain the stationary RICE (MACT Group 6) and control device, if applicable, according to the manufacturer's emission-related written instructions, or the permittee changes emission-related settings in a way that is not permitted by the manufacturer, the permittee must demonstrate compliance as follows:
- a. For the stationary RICE CB-15 and CB-17 in MACT Group 6, the permittee must keep a maintenance plan and records of conducted maintenance to demonstrate compliance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, if you do not install and configure the engine and control device according to the manufacturer's emission-related written instructions, or you change the emission-related settings in a way that is not permitted by the manufacturer, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within one year of such action.
 - b. For the stationary RICE (PH-2 in MACT Group 6), the permittee must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the engine in a manner consistent with good air pollution control practice for minimizing emissions. In addition, you must conduct an initial performance test to demonstrate compliance with the applicable emission standards within 1 year of startup, or within 1 year after an engine and control device is no longer installed, configured, operated, and maintained in accordance with the manufacturer's emission-related written instructions, or within one year after you change emission-related settings in a way that is not permitted by the manufacturer.

(9 VAC 5-80-110 and 40 CFR 60.4211 (g))

91. **Monitoring** - The permittee must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the stationary RICE (MACT Group 7) in a manner consistent with good air pollution control practice for minimizing emissions. The permittee must also conduct performance testing, as required in Condition 106, every 8,760 hours of operation or three years, whichever comes first, thereafter to demonstrate compliance.
(9 VAC 5-80-110 and 40 CFR 60.4243 (b)(2)(iii))
92. **Monitoring** – The permittee must keep a maintenance plan and records of conducted maintenance and must, to the extent practicable, maintain and operate the stationary RICE (MACT Group 8) in a manner consistent with good air pollution control practice for minimizing emissions.
(9 VAC 5-80-110 and 40 CFR 60.4243 (b)(2)(ii))
93. **Monitoring** - The permittee shall obtain a certification from the fuel supplier with each shipment of diesel fuel for the stationary RICE (Ref. MACT Group 5 and MACT Group 6) to demonstrate compliance with the limitation in Condition 77. If the stationary RICE (Ref. MACT Group 1 and MACT Group 4) operates for the purpose specified in Condition 74.b(1) through 74.b(5), the permittee shall obtain a certification from the fuel supplier with each shipment of diesel fuel for the stationary RICE (Ref. MACT Group 1 and MACT Group 4) to demonstrate compliance with the limitation in Condition 72. Each fuel supplier certification shall include the following:
- a. The name of the fuel supplier;
 - b. The date on which the diesel fuel was received;
 - c. The sulfur content of the diesel fuel or diesel/biodiesel fuel blend; and
 - d. A statement that the diesel fuel or diesel/biodiesel fuel blend complies with the ASTM specifications D975 (including ASTM D 5453 and ASTM 7093) for diesel fuel or diesel/biodiesel fuel blends.
- Fuel sampling and analysis, independent of the basis used for certification, may be periodically required or conducted by DEQ and may be used to determine compliance with the fuel specifications stipulated in Conditions 77 and 72.
(9 VAC 5-80-110)
94. **Recordkeeping** – The permittee shall maintain records of all emissions data and operating parameters necessary to demonstrate compliance with this permit for the stationary RICE (MACT Group 1, MACT Group 2, and MACT Group 4). The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:
- a. A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in §63.10(b)(2)(xiv).

- b. Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment.
- c. Records of performance tests and performance evaluations as required in §63.10(b)(2)(viii).
- d. Records of all required maintenance performed on the air pollution control and monitoring equipment.
- e. Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
- f. The records required in Table 6 to 40 CFR 63 Subpart ZZZZ to show continuous compliance with each emission or operating limitation that applies to the stationary RICE.
- g. Records of the maintenance conducted on the stationary RICE in order to demonstrate that the stationary RICE and after-treatment control device (if any) was operated and maintained according to the maintenance plan.
- h. Records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in Condition 74.b(1) through 74.b(5), the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.
- i. All fuel supplier certifications for MACT Group 1 and MACT Group 4 in accordance with Condition 93, if applicable.

The records must be in a form suitable and readily available for expeditious review. These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110, 40 CFR 63.6655 (a), 40 CFR 63.6655 (d), 40 CFR 63.6655(e), and 40 CFR 63.6655(f))

95. **Recordkeeping** – The permittee shall maintain records of all emissions data and operating parameters necessary to demonstrate compliance with this permit for the stationary RICE (MACT Group 3). The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:
- a. A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in §63.10(b)(2)(xiv).

- b. Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment.
- c. Records of performance tests and performance evaluations as required in §63.10(b)(2)(viii).
- d. Records of all required maintenance performed on the air pollution control and monitoring equipment.
- e. Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
- f. The records required in Table 6 to 40 CFR 63 Subpart ZZZZ to show continuous compliance with each emission or operating limitation that applies to the stationary RICE.
- g. Records of the maintenance conducted on the stationary RICE in order to demonstrate that the stationary RICE and after-treatment control device (if any) was operated and maintained according to the maintenance plan.

The records must be in a form suitable and readily available for expeditious review. These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110, 40 CFR 63.6655 (a), 40 CFR 63.6655 (d), and 40 CFR 63.6655(e))

96. **Recordkeeping** – The permittee shall maintain records of all emissions data and operating parameters necessary to demonstrate compliance with this permit for the stationary RICE (MACT Group 5). The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:
- a. A copy of each notification and report that you submitted to comply with this subpart, including all documentation supporting any Initial Notification or Notification of Compliance Status that you submitted, according to the requirement in §63.10(b)(2)(xiv).
 - b. Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment.
 - c. Records of performance tests and performance evaluations as required in §63.10(b)(2)(viii).
 - d. Records of all required maintenance performed on the air pollution control and monitoring equipment.

- e. Records of actions taken during periods of malfunction to minimize emissions in accordance with §63.6605(b), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.
- f. For each CPMS, you must keep the records listed below:
 - (1) Records described in §63.10(b)(2)(vi) through (xi)..
 - (2) Previous (*i.e.*, superseded) versions of the performance evaluation plan as required in §63.8(d)(3).
 - (3) Requests for alternatives to the relative accuracy test for CEMS or CPMS as required in §63.8(f)(6)(i), if applicable.
- g. The records required in Table 6 to 40 CFR 63 Subpart ZZZZ to show continuous compliance with each emission or operating limitation that is applicable.
- h. All fuel supplier certifications in accordance with Condition 93.

The records must be in a form suitable and readily available for expeditious review. These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110, 40 CFR 63.6655 (a), and 40 CFR 63.6655 (d))

97. **Recordkeeping** - The permittee shall maintain records of all emissions data and operating parameters necessary to demonstrate compliance with this permit for the stationary RICE (MACT Group 6). The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:

- a. Records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in Condition 74.b(1) through 74.b(5), the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.
- b. All fuel supplier certifications in accordance with Condition 93.
- c. Engine manufacture data indicating compliance with the emission limits in Condition 78.
- d. Maintenance conducted on each stationary RICE.

The records must be in a form suitable and readily available for expeditious review. These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110)

98. **Recordkeeping** - The permittee shall maintain records of all emissions data and operating parameters necessary to demonstrate compliance with this permit for the stationary RICE (MACT Group 7 and MACT Group 8). The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:
- a. All notifications submitted to comply with 40 CFR 60 Subpart JJJJ, and all documentation supporting any notification.
 - b. Maintenance conducted on each stationary RICE.
 - c. Documentation that the stationary RICE meet the emission standards in Condition 79.
 - d. Records of all performance test results.

The records must be in a form suitable and readily available for expeditious review. These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110 and 40 CFR 60.4245(a))

99. **Recordkeeping** - The permittee shall maintain records of all emissions data and operating parameters necessary to demonstrate compliance with this permit for the stationary RICE (MACT Group 9). The content and format of such records shall be arranged with the DEQ. These records shall include, but are not limited to:
- a. All notifications submitted to comply with 40 CFR 60 Subpart JJJJ, and all documentation supporting any notification.
 - b. Maintenance conducted on each stationary RICE.
 - c. Documentation from the manufacturer that the engine is certified to meet the emission standards in Condition 80.
 - d. Records of the hours of operation of the engine that is recorded through the non-resettable hour meter. The permittee must document how many hours are spent for emergency operation, including what classified the operation as emergency and how many hours are spent for non-emergency operation. If the engine is used for the purposes specified in Condition 74.b(1) through 74.b(5), the owner or operator must keep records of the notification of the emergency situation, and the date, start time, and end time of engine operation for these purposes.

The records must be in a form suitable and readily available for expeditious review. These records shall be available for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110 and 40 CFR 60.4245(a))

100. **Testing** – For each stationary RICE (Ref. MACT Group 5) complying with the requirement to reduce carbon monoxide (CO) emissions, the permittee must conduct subsequent performance tests, as described in Condition 101, every 8,760 hours or three years, whichever comes first.

(9 VAC 5-80-110, 40 CFR 63.6615, 40 CFR 63.6620(a), and Table 3 to 40 CFR 63 Subpart ZZZZ)

101. **Testing** – For each stationary RICE (Ref. MACT Group 5) complying with the requirement to reduce carbon monoxide (CO) emissions, the permittee must meet with all the applicable requirements specified for the testing of compression` ignition stationary RICE in Section 1 of Table 4 to Subpart ZZZZ of Part 63 – Requirements for Performance Tests. The permittee must conduct three separate test runs for each performance test required in this section, as specified in 40 CFR 63.7(e)(3). Each test run must last at least 1 hour, unless otherwise specified in 40 CFR 63 Subpart ZZZZ.
(9 VAC 5-80-110, 40 CFR 63.6620 (b), 40 CFR 63.6620 (d), and Table 4 to 40 CFR 63 Subpart ZZZZ)
102. **Testing** – For each stationary RICE (MACT Group 5) complying with the requirement to limit the concentration of CO in the stationary RICE exhaust, the permittee must meet all of the applicable requirements specified for testing compression ignition stationary RICE in Section 3 of Table 4 to Subpart ZZZZ of Part 63 Requirements for Performance Tests. The permittee must conduct three separate test runs for each performance test required in this section, as specified in 40 CFR 63.7(e)(3). Each test run must last at least 1 hour, unless otherwise specified in 40 CFR 63 Subpart ZZZZ.
(9 VAC 5-80-110, 40 CFR 63.6620 (b), 40 CFR 63.6620 (d), and Table 4 to 40 CFR 63 Subpart ZZZZ)
103. **Testing** – The permittee must use 40 CFR 63.6620 (e)(1) Equation 1 to determine compliance with the percent reduction requirement (MACT Group 5).
(9 VAC 5-80-110 and 40 CFR 63.6620 (e)(1))
104. **Testing** – The permittee must normalize the CO concentrations at the inlet and outlet of the control device to a dry basis and to 15 percent oxygen, or an equivalent percent carbon dioxide (CO₂). If pollutant concentrations are to be corrected to 15 percent oxygen and CO₂ concentration is measured in lieu of oxygen concentration measurement, a CO₂ correction factor is needed. Calculate the CO₂ correction factor as described in 40 CFR 63.6620 (e)(2) (MACT Group 5):
(9 VAC 5-80-110 and 40 CFR 63.6620 (e)(2))
105. **Testing** - The engine percent load during a performance test for the stationary RICE (MACT Group 5) must be determined by documenting the calculations, assumptions, and measurement devices used to measure or estimate the percent load in a specific application. A written report of the average percent load determination must be included in the notification of compliance status. The following information must be included in the written report: the engine model number, the engine manufacturer, the year of purchase, the manufacturer's site-rated brake horsepower, the ambient temperature, pressure, and humidity during the performance test, and all assumptions that were made to estimate or calculate percent load during the performance test must be clearly explained. If measurement devices such as flow meters, kilowatt meters, beta analyzers, stain gauges, etc. are used, the model number of the measurement device, and an estimate of its accurate in percentage of true value must be provided.
(9 VAC 5-80-110 and 40 CFR 63.6620 (i))

106. **Testing** – The performance testing required for the stationary RICE (MACT Group 7) must follow the applicable testing requirements in §60.4244. The permittee must submit a copy of each performance test result to the DEQ within 60 days after the test has been completed.
(9 VAC 5-80-110 and 40 CFR 60.4244)
107. **Reporting** – The permittee must report each instance in which the stationary RICE (MACT Group 1, MACT Group 2, MACT Group 3, MACT Group 4, and MACT Group 5) did not meet the requirements of 40 CFR 63 Subpart ZZZZ, Table 8, that are applicable.
(9 VAC 5-80-110 and 40 CFR 63.6640(e))
108. **Reporting** – The permittee must report each instance in which you did not meet each emission limitation or operating limitation in Tables 2b and Table 2d to 40 CFR 63 Subpart ZZZZ that apply to the stationary RICE (MACT Group 5). These instances are deviations from the emission and operating limitations in this subpart. These deviations must be reported according to the requirements in §63.6650. If you change your catalyst, you must reestablish the values of the operating parameters measured during the initial performance test. When you reestablish the values of your operating parameters, you must also conduct a performance test to demonstrate that you are meeting the required emission limitation applicable to your stationary RICE.
(9 VAC 5-80-110 and 40 CFR 63.6640 (b))
109. **Reporting** – The permittee must submit a Notification of Intent to conduct a performance test for the stationary RICE (MACT Group 5) at least 60 days before the performance test is scheduled to begin as required in 40 CFR 63.7(b)(1).
(9 VAC 5-80-110 and 40 CFR 63.6645(g))
110. **Reporting** – The permittee must submit a compliance report for the stationary RICE (Ref. MACT Group 1, MACT Group 2, and MACT Group 4) if an emergency engine is operating during an emergency and it is not possible to shut down the engine in order to perform the management practice requirements on the schedule required in Table 2d of this subpart, or if performing the management practice on the required schedule would otherwise pose an unacceptable risk under federal, state, or local law, the management practice can be delayed until the emergency is over or the unacceptable risk under federal, state, or local law has abated. The management practice should be performed as soon as practicable after the emergency has ended or the unacceptable risk under federal, state, or local law has abated. Sources must report any failure to perform the management practice on the schedule required and the federal, state or local law under which the risk was deemed unacceptable.
(9 VAC 5-80-110 and 40 CFR 63 Table 2d, Footnote 2)
111. **Reporting** – The permittee must submit a compliance report semiannually for the stationary RICE (Ref. MACT Group 5) according to the requirements in 40 CFR 63.6650(b) and Condition 112.a through d. The report must contain:

- a. If there are no deviations from any emission limitations or operating limitations that apply to the permittee, a statement that there were no deviations from the emission limitations or operating limitations during the reporting period. If there were no periods during which the CMS, including the CPMS, was out-of-control, as specified in 40 CFR 63.8(c)(7), a statement that there were not periods during which the CMS was out-of-control during the reporting period; or
- b. If the permittee had a deviation from any emission limitation or operating limitation during the reporting period, the information in 40 CFR 63.6650(d). If there were periods during which the CMS, including the CPMS, was out-of-control, as specified in 40 CFR 63.8(c)(7), the information in 40 CFR 63.6650(e); or
- c. If the permittee had a malfunction during the reporting period, the information in 40 CFR 63.6650(c)(4).

(9 VAC 5-80-110, 40 CFR 63.6650 (a), and Table 7 to 40 CFR 63 Subpart ZZZZ)

112. **Reporting** - Unless DEQ has approved a different schedule for submission of reports under 40 CFR 63.10(a), the permittee must submit each report by the date in 40 CFR 63.6650 and according to the following requirements (MACT Group 5):

- a. For semiannual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for the affected source in 40 CFR 63.6595 and ending on June 30 or December 31, whichever date is the first date following the end of the first calendar half after the compliance date that is specified for the source in 40 CFR 63.6595.
- b. For semiannual Compliance reports, the first Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date follows the end of the first calendar half after the compliance date that is specified for the affected source in 40 CFR 63.6595.
- c. For semiannual Compliance reports, each subsequent Compliance report must cover the semiannual reporting period from January 1 through June 30 or the semiannual reporting period from July 1 through December 31.
- d. For semiannual Compliance reports, each subsequent Compliance report must be postmarked or delivered no later than July 31 or January 31, whichever date is the first date following the end of the semiannual reporting period.
- e. For each stationary RICE that is subject to permitting regulations pursuant to 40 CFR Part 70 or 71, and if the permitting authority has established dates for submitting semiannual reports pursuant to 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6 (a)(3)(iii)(A), the permittee may submit the first and subsequent Compliance reports according to the dates the permitting authority has established instead of according to the dates in a through d of this Condition.

- f. For annual Compliance reports, the first Compliance report must be postmarked or delivered no later than January 31 following the end of the first calendar year after the compliance date that is specified for your affected source in 40 CFR 63.6595.
- g. For annual Compliance reports, the first Compliance report must cover the period beginning on the compliance date that is specified for the affected source in 40 CFR 63.6595 and ending on December 31.
- h. For annual Compliance reports, each subsequent Compliance report must cover the annual reporting period from January 1 through December 31.

(9 VAC 5-80-110 and 40 CFR 63.6650 (b))

113. **Reporting** – The compliance reports in Condition 112 must contain:

- a. Company name and address.
- b. Statement by a responsible official, with that official's name, title, and signature, certifying the accuracy of the content of the report.
- c. Date of report and beginning and ending dates of the reporting period.
- d. If the permittee had a malfunction during the reporting period, the compliance report must include the number, duration, and a brief description for each type of malfunction which occurred during the reporting period and which caused or may have caused any applicable emission limitation to be exceeded. The report must also include a description of actions taken by an owner or operator during a malfunction of an affected source to minimize emissions in accordance with 40 CFR 63.6605(b), including actions taken to correct a malfunction.
- e. If there are no deviations from any emission or operating limitations that apply to the permittee, a statement that there were no deviations from the emission or operating limitations during the reporting period.
- f. If there were no periods during which the continuous monitoring system (CMS), including CEMS and CPMS, was out-of-control, as specified in 40 CFR 63.8(c)(7), a statement that there were no periods during which the CMS was out-of-control during the reporting period.

(9 VAC 5-80-110 and 40 CFR 63.6650 (c))

114. **Reporting** - For each deviation from an emission or operating limitation occurring for a stationary RICE (MACT Group 5) where the permittee is using a CMS to comply with the emission and operating limitations in this subpart, the permittee must include information in Condition 113.a through d and the following:

- a. The date and time that each malfunction started and stopped.

- b. The date, time, and duration that each CMS was inoperative, except for zero (low-level) and high-level checks.
- c. The date, time, and duration that each CMS was out-of-control, including the information in 40 CFR 63.8(c)(8).
- d. The date and time that each deviation started and stopped, and whether each deviation occurred during a period of malfunction or during another period.
- e. A summary of the total duration of the deviation during the reporting period, and the total duration as a percent of the total source operating time during that reporting period.
- f. A breakdown of the total duration of the deviations during the reporting period into those that are due to control equipment problems, process problems, other known causes, and other unknown causes.
- g. A summary of the total duration of CMS downtime during the reporting period, and the total duration of CMS downtime as a percent of the total operating time of the stationary RICE at which the CMS downtime occurred during that reporting period.
- h. An identification of each parameter and pollutant (CO) that was monitored at the stationary RICE.
- i. A brief description of the stationary RICE.
- j. A brief description of the CMS.
- k. The date of the latest CMS certification or audit.
- l. A description of any changes in CMS, processes, or controls since the last reporting period.

(9 VAC 5-80-110 and 40 CFR 63.6650 (e))

115. **Reporting** – The permittee shall report all deviations for the stationary RICE (MACT Group 5) as defined in 40 CFR 63 Subpart ZZZZ in the semiannual monitoring report required by 40 CFR 70.6 (a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A). If an affected source submits a Compliance report pursuant to Table 7 of this subpart along with, or as part of, the semiannual monitoring report required by 40 CFR 70.6(a)(3)(iii)(A) or 40 CFR 71.6(a)(3)(iii)(A), and the Compliance report includes all required information concerning deviations from any emission or operating limitation in this subpart, submission of the Compliance report shall be deemed to satisfy any obligation to report the same deviations in the semiannual monitoring report. However, submission of a Compliance report shall not otherwise affect any obligation the affected source may have to report deviations from permit requirements to the permit authority.

(9 VAC 5-80-110 and 40 CFR 63.6650 (f))

Gasoline Dispensing Facilities

116. **Limitations – MACT CCCCCC** – The facility must, at all times, operate and maintain any affected source, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to DEQ which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the source.
(9 VAC 5-80-110 and 40 CFR 63.11115)
117. **Limitations – MACT CCCCCC** – In accordance with 40 CFR 63 Subpart CCCCCC for gasoline dispensing facilities with monthly throughput less than 10,000 gallons of gasoline:
- a. The permittee must not allow gasoline to be handled in a manner that would result in vapor releases to the atmosphere for extended periods of time. Measures to be taken include, but are not limited to, the following:
 - (1) Minimize gasoline spills;
 - (2) Clean up spills as expeditiously as practicable;
 - (3) Cover all open gasoline containers and all gasoline storage tank fill-pipes with a gasketed seal when not in use; and
 - (4) Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as oil/water separators.
 - b. The permittee is not required to submit notifications or reports as specified in 40 CFR 63.11125, 40 CFR 63.11126, or 40 CFR 63 Subpart A, but you must have records available within 24 hours of a request by DEQ to document your gasoline throughput.
 - c. The permittee must comply with the requirements of this subpart by the applicable dates specified in 40 CFR 63.11113.
 - d. Portable gasoline containers that meet the requirements of 40 CFR Part 59, subpart F, are considered acceptable for compliance with (a)(3) of this condition.

If the throughput of the gasoline dispensing facility ever exceeds an applicable throughput threshold in 40 CFR 63.11111, the gasoline dispensing facility will remain subject to the requirements for sources above the threshold, even if the throughput later falls below the applicable throughput threshold.

(9 VAC 5-80-110 and 40 CFR 63.11116)

118. **Recordkeeping and Reporting – MACT CCCCCC** – The permittee must keep applicable records and submit reports as specified in 40 CFR 63.11125(d) and 40 CFR 63.11126(b).
(9 VAC 5-80-110 and 40 CFR 63.11115)

119. **Recordkeeping – MACT CCCCCC** – The facility shall keep the following records:

- a. Records of the occurrence and duration of each malfunction of operation (*i.e.*, process equipment) or the air pollution control and monitoring equipment.
- b. Records of actions taken during periods of malfunction to minimize emissions in accordance with 40 CFR 63.11115(a), including corrective actions to restore malfunctioning process and air pollution control and monitoring equipment to its normal or usual manner of operation.

(9 VAC 5-80-110 and 40 CFR 63.11125 (d))

Chemical Manufacturing

120. **Limitations – MACT VVVVVV** – In accordance with 40 CFR 63 Subpart VVVVVV:

- a. Each process vessel must be equipped with a cover or lid that must be closed at all times when it is in organic HAP service or metal HAP service, except for manual operations that require access, such as material addition and removal, inspection, sampling and cleaning. This requirement does not apply to process vessels containing only metal HAP that are in a liquid solution or other form that will not result in particulate emissions of metal HAP (e.g., metal HAP that is in ingot, paste, slurry, or moist pellet form or other form).
- b. The permittee must conduct inspections of process vessels and equipment for each CMPU in organic HAP service or metal HAP service, as specified in (c)(1) through (5), to demonstrate compliance with Condition 120 (a) and to determine that the process vessels and equipment are sound and free of leaks. Alternatively, except when the subject CMPU contains metal HAP as particulate, inspections may be conducted while the subject process vessels and equipment are in VOC service, provided that leaks can be detected when in VOC service:
 - (1) Inspections must be conducted at least quarterly.
 - (2) For these inspections, detection methods incorporating sight, sound, or smell are acceptable. Indications of a leak identified using such methods constitute a leak unless the permittee demonstrates that the indications of a leak are due to a condition other than loss of HAP. If indications of a leak are determined not to be HAP in one quarterly monitoring period, the permittee must still perform the inspection and demonstration in the next quarterly monitoring period.
 - (3) As an alternative to conducting inspections, as specified in Condition 120 (b)(2), the permittee may use Method 21 of 40 CFR part 60, Appendix A-7, with a leak definition of 500 ppmv to detect leaks. The permittee may also use Method 21 with a leak definition of 500 ppmv to determine if indications of a leak identified during an inspection conducted in accordance with Condition 120 (b)(2) are due to a condition other than loss of HAP. The procedures may not be used as an alternative to the inspection required by Condition 120 (b)(2) of this section for process vessels that contain metal HAP as particulate.
 - (4) Inspections must be conducted while the subject CMPU is operating.
 - (5) No inspection is required in a calendar quarter during which the subject CMPU does not operate for the entire calendar quarter and is not in organic HAP service or metal HAP service. If the CMPU operates at all during a calendar quarter, an inspection is required. If the CMPU, or any process vessels/equipment within the CMPU, does not operate at any time in organic HAP service or metal HAP service during an entire calendar quarter, no inspection is required for that CMPU or the process vessels/equipment within the CMPU, as applicable.

- c. The permittee must repair any leak within 15 calendar days after detection of the leak, or document the reason for any delay of repair. A leak will be considered “repaired” if a condition specified in (1) through (3) is met:
 - (1) The visual, audible, olfactory, or other indications of a leak to the atmosphere have been eliminated, or
 - (2) No bubbles are observed at potential leak sites during a leak check using soap solution, or
 - (3) The system will hold a test pressure.
- d. The permittee must keep records of the dates and results of each inspection event, the dates of equipment repairs, and, if applicable, the reasons for any delay in repair.
- e. *Startup, shutdown and malfunction.* Startup, shutdown, and malfunction (SSM) provisions in subparts that are referenced in Condition 120(a) through (d) do not apply.
- f. *General duty.* At all times, the permittee must operate and maintain any affected CMPU, including associated air pollution control equipment and monitoring equipment, in a manner consistent with safety and good air pollution control practices for minimizing emissions. Determination of whether such operation and maintenance procedures are being used will be based on information available to DEQ, which may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the CMPU.

(9 VAC 5-80-110 and 40 CFR 63.11495)

121. **Recordkeeping – MACT VVVVVV** – The facility must maintain files of all information required by 40 CFR 63 Subpart VVVVVV for at least five years following the date of each occurrence according to the requirements in 40 CFR 63.10(b)(1). If the permittee is subject, the permittee must comply with the recordkeeping and reporting requirements of 40 CFR 63.10(b)(2)(iii) and (vi) through (xiv).

(9 VAC 5-80-110 and 40 CFR 63.11501 (c))

122. **Reporting – MACT VVVVVV - Semiannual Compliance Reports:** The permittee must submit semiannual compliance reports that contain the information specified in (a) through (f), as applicable. Reports are required only for semiannual periods during which you experienced any of the events described in (a) through (f):

- a. *Deviations.* The permittee must clearly identify any deviation from the requirements of 40 CFR 63 Subpart VVVVVV.
- b. *Delay of leak repair.* The permittee must provide the following information for each delay of leak repair beyond 15 days for any process equipment, storage tank, surge control vessel, bottoms receiver, and each delay of leak repair beyond 45 days for any heat exchange system with a cooling water flow rate less than 8,000 gal/min: information on the date the leak was identified, the reason for the delay in repair, and the date the leak was repaired.

- c. *Process change.* The permittee must report each process change that affects a compliance determination and submit a new certification of compliance with the applicable requirements.
- d. *Data for the alternative standard.* If you comply with the alternative standard, as specified in Table 2 or Table 3 of 40 CFR 63 Subpart VVVVVV, report the information required in 40 CFR 63.1258(b)(5).
- e. *Overlapping rule requirements.* Report any changes in the overlapping provisions with which the permittee complies.
- f. *Malfunctions.* If a malfunction occurred during the reporting period, the report must include the number of instances of malfunctions that caused emissions in excess of a standard. For each malfunction that caused emissions in excess of a standard, the report must include a list of the affected sources or equipment, an estimate of the volume of each regulated pollutant emitted over the standard, and a description of the method used to estimate the emissions. The report must also include a description of actions the permittee took during a malfunction of an affected source to minimize emissions in accordance with 40 CFR 63.11495(d), including actions taken to correct a malfunction.

(9 VAC 5-80-110 and 40 CFR 63.11501 (c))

Facility-Wide Conditions for Visible Emissions

123. **Limitations** – Visible emissions from each process unit stack constructed, reconstructed, or modified on or after March 17, 1972, shall not exceed 20% opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A) or by the opacity CEMS required in Condition 125, except during one six-minute period in any one hour in which visible emissions shall not exceed 30% opacity. This condition applies at all times except during startup, shutdown or malfunction.
(9 VAC 5-50-80 and 9 VAC 5-80-110)
124. **Limitations** – Visible emissions from each process unit stack constructed, reconstructed, or modified prior to March 17, 1972, shall not exceed 20% opacity as determined by EPA Method 9 (reference 40 CFR 60, Appendix A) or by the opacity CEMS, except during one six-minute period in any one hour in which visible emissions shall not exceed 60% opacity.
(9 VAC 5-40-80 and 9 VAC 5-80-110)
125. **Monitoring** – The permittee shall install, calibrate, maintain, and operate a continuous monitoring and recording system on the natural gas-fired boilers (Ref. B-7 and B-8) for measuring opacity using a continuous emissions monitoring system or a predictive emissions monitoring system in accordance with Condition 6.f. The requirement to operate the opacity CEMS applies only when burning distillate oil in the natural gas-fired boilers.
(9 VAC 5-80-110 and 40 CFR 60.49b(u)(1)(ii))
126. **Monitoring** – The permittee shall conduct visible emission inspections on each process unit stack not subject to Condition 127 in accordance with the following procedures and frequencies:
- At a minimum of once per month, the permittee shall determine the presence of visible emissions. If during the inspection, visible emissions are observed, a visible emission evaluation (VEE) shall be conducted in accordance with 40 CFR 60, Appendix A, EPA Method 9, unless timely corrective action is taken such that the stack resumes operation with no visible emissions. The VEE shall be conducted for a minimum of six minutes. If any of the observations exceed 20%, the VEE shall be conducted for a total of 60 minutes.
 - All visible emissions inspections shall be performed when the process unit is operating.
 - If visible emissions inspections conducted during 12 consecutive months show no visible emissions for a particular process unit stack, the permittee may reduce the monitoring frequency to once per quarter for that process unit stack. Anytime the quarterly visible emissions inspections show visible emissions, or when requested by DEQ, the monitoring frequency shall be increased to once per month for that stack.

- d. For process units that do not operate year round, 12 non-consecutive monthly visible inspections shall be performed. If visible emissions inspections conducted during 12 non-consecutive months show no visible emissions for a particular process unit stack, the permittee may reduce the monitoring frequency to once per quarter for that process unit stack. Anytime the quarterly visible emissions inspections show visible emissions, or when requested by DEQ, the monitoring frequency shall be increased to once per month for that stack.

All observations, VEE results, and corrective actions taken shall be recorded.

(9 VAC 5-80-110)

127. **Monitoring** – The requirement for visible emissions inspections shall not apply to the following emissions units:

- a. Internal combustion engines used as emergency units and operated for less than five consecutive days.
- b. Units for which continuous opacity monitoring is required by this permit.
- c. Any process unit that has uncontrolled particulate matter or PM-10 emissions of less than five tons per year.

(9 VAC 5-80-110)

128. **Recordkeeping** – The permittee shall maintain records of all emissions data and operating parameters necessary to demonstrate compliance with this permit. The content and format of such records shall be arranged with DEQ. These records shall include, but are not limited to:

- a. Records of continuous opacity monitoring as required in Condition 125.
- b. Records of visible emissions monitoring as required in Condition 126.
- c. Process units subject to 127.c. shall be listed in an up-to-date version of Attachment A without permit amendment in accordance with Condition 130.

These records shall be available on site for inspection by the DEQ and shall be current for the most recent five years.

(9 VAC 5-80-110)

129. **Testing** – If testing is conducted in addition to the monitoring specified in the permit, the permittee shall use the appropriate method(s) in accordance with the procedures approved by the DEQ.

(9 VAC 5-80-110)

130. **Reporting** – The permittee shall notify DEQ in writing within 30 days of equipment or process changes resulting in increased particulate matter (PM) emissions for units listed in Attachment A, if the resulting uncontrolled PM emissions level for such a unit is greater than five tons per year. Following the equipment or process change, such equipment shall be subject to the visible emissions monitoring requirements in Condition 126. If an emissions unit not listed in Attachment A undergoes equipment or process changes resulting in an adjusted uncontrolled PM emissions level below five tons per year, the permittee shall notify DEQ in writing before ceasing the visible emissions monitoring required by Condition 126. An up-to-date version of Attachment A shall be maintained on site and available for inspection.

(9 VAC 5-80-110)

Administration Of PSD (Project XL) Permit

Periodic Review of the PSD Permit – The PSD permit shall be periodically reviewed as specified in this section. Changes to the PSD permit shall be made either: after full consent of the project signatories and subject to the permit modification procedures promulgated in the permittee's site-specific rule, or pursuant to PSD permit modification procedures generally applicable to all PSD permits. Changes to the PSD permit other than those described below are not subject to review except as otherwise agreed to by full consent of the project signatories. Discussion of issues brought by the project stakeholders relating to the PSD permit may occur as needed.

131. Periodic Review of the PSD Permit – Five-Year Periodic Review

Within three months of the five year anniversary of the completion of the powerhouse conversion project (i.e., within three months of July 12, 2005) and every five years thereafter, the project stakeholders shall reconvene to review whether any of the following changes to the PSD permit are required.

- a. Significant changes in calculation methods – Current state-of-the-art emissions estimation techniques are used to calculate emissions from the site. These methods and their application to the site's emission sources are specified in Table I. If significant changes are made to these methods, or new methods are identified that are determined to be appropriate for emission sources at the site, adjustments to the site's emissions caps, HEP and current actual emissions may be considered, depending on the nature and extent of the new methods or changes to the current emissions estimation techniques.
- b. Change in list of criteria pollutants or National Ambient Air Quality Standards (NAAQS) – If EPA adds, deletes, or modifies the list of criteria pollutants or NAAQSs, adjustments to the site's emissions caps, HEP, current actual emissions, and other changes to the PSD permit may be considered, depending on the reason for the change and its impact on the site's emission totals. If changes are made to incorporate the revision, Condition 1 will also be revised to reflect the addition, deletion, or modification of the pollutant.
- c. Review of examples of control technology in Condition 1.f(2)(c) – Controls listed in Condition 1.f(2)(c) represent good environmental engineering practice with regard to controlling air pollutants. Changes to this list may be considered, including evaluation of new control technology, to ensure that the section continues to represent good environmental engineering practice.
- d. Adequacy of Condition 6 requirements – Condition 6 (Monitoring, Recordkeeping, and Reporting Requirements) may be reviewed to ensure that it provides information necessary to evaluate the site's performance under the agreement. This section also may be reviewed to identify overlapping or unnecessary requirements.

- e. Review Procedure for New Criteria Pollutant Regulations – Condition 1.e(1)(c) describes the review and approval procedure for the emissions cap adjustment for new regulations. This procedure may be evaluated and changes to the procedure considered in order to facilitate timely and appropriate adjustments.
- f. Review of Termination Criteria – Condition 134 specifies criteria subject to which the PSD would be terminated. These criteria may be evaluated and changes considered as deemed necessary.
- g. Review of Modeling for Short Term PM-10 and SO₂ emissions – Prior to the five-year review, the permittee shall submit to the project stakeholders information necessary to perform short term PM-10 and SO₂ NAAQS modeling, similar in extent and detail to the modeling performed for the original PSD permit support documentation. This information shall include but not be limited to the current plant configuration with information on building locations and dimensions, information on emission sources including stack dimensions, exit gas parameters, and emission rates for actual operating conditions and worst case short-term (3 and 24-hour) operating conditions. If major changes have been made at the site not reflected in the most recent modeling analysis, the permittee shall perform an updated modeling analysis if requested by EPA or DEQ.
- h. Review of the Determination that the Area is NO_x Limited for Ozone Formation – If any project stakeholders present technical papers or studies that change the generally recognized determination that the area near the site, including the Shenandoah National Park, is NO_x-limited for ozone formation, changes to terms of the PSD permit may be considered.
- i. Review of Periodic Review Criteria – Conditions 131 and 132 specifies criteria by which the PSD permit shall be periodically reviewed. These criteria may be evaluated and changes considered as deemed necessary.

(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 6 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

132. Periodic Review of the PSD Permit – Review Triggered by Emission Levels

- a. Review of Air Quality Related Values (AQRVs)
 - (1) Trigger for AQRV Assessment: The AQRV assessment specified in this subsection shall be triggered upon either of the following events:
 - (a) After installation of any individual new process or process modification that results in a net increase in the site's actual VOC emissions of 100 TPY or more. Net increase means the sum of emission increases and decreases occurring at the site resulting from the new or modified installation.

- (b) After the first time the site-wide VOC emissions exceed two times the baseline (Table VII) VOC level (i.e., if site-wide VOC emissions reach 816 TPY).

Table VII. Actual Criteria Pollutant Emissions from the Elkton Plant.

Pollutant	1992 Actual Emissions (TPY)	1993 Actual Emissions (TPY)	Average of 1992 and 1993 (TPY)	Emission Cap Established in Condition 1.a-1.d.
SO ₂	714	723	719	539
NO _x	293	290	291	262
CO	44	42	43	N/A
PM-10	42	42	42	46
VOC	442	374	408	N/A
Total Criteria Emissions	1535	1471	1503	1202

- (2) AQRV Assessment: If an AQRV assessment is triggered in 132.a(1), VOC emission increases shall be reviewed to determine whether they are the cause of or significantly contribute to adverse impacts on any AQRVs at the Class I area (Shenandoah National Park). The permittee shall be responsible for performing the assessment of VOC impacts on AQRVs using demonstrated methods for such assessments.
- (3) Mitigation Measures: If the project signatories agree that the permittee's VOC emissions are the cause of adverse impacts on any AQRVs at the Class I area (Shenandoah National Park), the permittee shall implement mitigation measures that are agreed to by the project signatories.
- b. Review of Non-HAP VOCs – No later than three months after the site-wide VOC emissions reach 125% of the baseline (Table VII) VOC level (i.e., if site-wide VOC emissions reach 510 TPY):
- (1) The permittee shall provide to the project stakeholders the list of non-HAP VOCs that were emitted from the facility in the previous 12 months. EPA shall conduct a review of the scientific literature for any new information on the health effects of these compounds and provide such information to the project stakeholders.

- (2) The permittee shall conduct a site-wide modeling assessment of non-HAP VOC emissions yielding average property line concentrations. These modeling results shall be compared to the Significant Ambient Air Concentrations (SAAC) established in the Virginia Air Regulations (9 VAC 5 Chapter 60, Article 4 (9 VAC 5-60-200 et seq. replaces 9 VAC 5 Chapter 40, Part II, Article 3 (9 VAC 5-40-160 et seq.)) and 9 VAC 5 Chapter 60, Part II, Article 5 (9 VAC 5-60-300 et seq. replaces 9 VAC 5 Chapter 50, Part II, Article 3 (9 VAC 5-50-160 et seq.)), except the most recent Threshold Limit Values published by the ACGIH shall be used in the SAAC calculations. If this assessment predicts an exceedance of the SAAC for any of the modeled substances, the permittee shall either:
- (a) Demonstrate to the DEQ's satisfaction that the applicable SAAC is inappropriate for the substance in question by showing that the emissions from the site produce no endangerment of human health; or
 - (b) Implement changes at the site resulting in ambient concentrations of the substance that are below the SAAC or resulting in such other ambient concentrations acceptable to the DEQ.

Any actions pursuant to 132.b(2)(a) or 132.b(2)(b) to resolve any SAAC exceedance shall be initiated within four months of reaching the VOC level that triggered this subsection, and communicated to the project stakeholders.

- (3) Subsequent assessments specified in 132.b(1) and 132.b(2) shall be conducted if site-wide VOC emissions increase further whenever such incremental increases exceed 100 TPY (i.e., at VOC levels of 610 TPY, 710 TPY, 810 TPY, etc.). If 9 VAC 5 Chapter 60, Part II, Article 4 (formerly 9 VAC 5 Chapter 40, Part II, Article 3) or 9 VAC 5 Chapter 60, Part II, Article 5 (formerly 9 VAC 5 Chapter 50, Part II, Article 3) of the Virginia Air Regulations are significantly modified or rescinded, the project stakeholders shall consider an alternative system upon which to base this periodic evaluation. Unless the project signatories agree to change or eliminate this system, the requirements of this subsection shall remain in effect.

(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 6 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

133. **Duration of the PSD Permit** – The PSD permit shall continue to be in effect unless terminated as specified in Condition 134 or Condition 137.

(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 7 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

134. Termination of the PSD Permit

- a. The PSD permit may be terminated as provided in Conditions 134b – d upon written notice for the following reasons only:
 - (1) If the EPA or DEQ determines that continuation of the PSD permit is an imminent and substantial endangerment to public health or welfare, or the environment.
 - (2) If the permittee knowingly falsifies emissions data.
 - (3) If the permittee receives four consent orders or two judgments adverse to the permittee arising from non-compliance with the PSD permit in a five year period that are deemed material.
 - (4) If the total emissions cap is exceeded.
 - (5) Upon full consent of all project signatories.
 - (6) For other reasons not specified in Condition 134.a for which DEQ has statutory authority to terminate the PSD permit.
- b. Force Majeure Exemption from Condition 134.a
 - (1) A force majeure is defined as any event arising from causes not reasonably foreseeable and beyond the control of the permittee, which cannot be overcome by due diligence and which delays or prevents performance by a date or manner required by the PSD permit.
 - (2) Such force majeure events shall not cause termination of the PSD permit providing that the permittee complies with the notification requirements in Condition 134.b(3).
 - (3) Within seven calendar days after it becomes aware of an event which the permittee claims constitutes a force majeure exemption from Condition 134.a, the permittee shall notify EPA and DEQ. This notification shall include the estimated time anticipated for the delay, its cause, measures taken or to be taken to prevent or minimize the delay, and the estimated timetable for the implementation of these measures.
- c. In the event of termination as specified in Condition 134.a, the DEQ or EPA shall provide the project signatories with written notice of its intent to terminate the PSD permit. Within 30 calendar days of the permittee's receipt of this notice, the permittee may take corrective action to remedy the cause of the termination. If this remedy (which may include a corrective action plan and schedule) is deemed acceptable by the regulatory agency that provided written notice of its intent to terminate the permit, the action to terminate the PSD permit shall be withdrawn. Otherwise, the PSD permit is terminated as provided in Condition 134.d.

- d. If the notice of intent to terminate is not withdrawn by the enforcing agency as provided in Condition 134.c, the agreement shall be terminated in the following manner:
- (1) The permittee shall submit a revised Title V application under the then-applicable Title V program no later than 12 months after the notice of intent to terminate, or within some other reasonable shorter time period as agreed to by the Title V-implementing agency and the permittee (called the interim period).
 - (2) During this interim period the permittee shall meet with the Title V-implementing agency to agree upon the appropriate applicable requirements to be included in the Title V application and draft permit.
 - (3) During this interim period the permittee shall abide by all terms of the PSD permit that are in effect at that time. If the site's actual 12-month rolling total of criteria pollutant emissions equals or exceeds the total emissions cap, increases of these emissions shall be allowed only with prior approval from the permitting authority(ies) and receipt of any necessary preconstruction permits.
 - (4) Once the revised Title V permit application is submitted and deemed complete, the Title V-implementing agency shall issue an order stipulating that the site shall operate under the requirements as specified in the Title V application and in compliance with all applicable requirements. Upon issuance of the order the PSD permit would be terminated.
- e. Termination of the PSD permit does not cancel the permittee's obligation to complete any corrective actions relating to non-compliance under the PSD permit.

(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 8 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

135. Inspection and Entry

- a. Upon presentation of credentials and other documents as may be required by law, the permittee shall allow authorized representatives of EPA and DEQ to perform the following:
- (1) Enter upon the site.
 - (2) Have access to and copy at reasonable times any records that must be kept under the conditions of the PSD permit.
 - (3) Have access at reasonable times to batch and other plant records needed to verify emissions.

- (4) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations required under the PSD permit.
- (5) Sample or monitor any substances or parameters at any location, during operating hours, for the purpose of assuring PSD permit compliance or as otherwise authorized by the Clean Air Act.
- b. No person shall obstruct, hamper, or interfere with any such authorized representative while in the process of carrying out his official duties. Refusal of entry or access may constitute grounds for PSD permit violation and assessment of civil penalties.
- c. Such site, facility and equipment access, and sampling and monitoring shall be subject to the permittee's safety and industrial hygiene procedures, and Food and Drug Administration and Good Manufacturing Practice requirements in force at the site.

(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 9 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

136. **Reservation of Rights**

- a. Except as expressly provided in the PSD permit:
 - (1) Each project signatory reserves all rights and defenses it may have, and
 - (2) Nothing herein shall prevent EPA or DEQ from taking administrative enforcement measures or seeking legal or equitable relief to enforce the terms of the PSD permit, including but not limited to the right to seek injunctive relief, and imposition of statutory penalties, fines and/or punitive damages.
- b. Nothing herein shall be construed to limit the rights of EPA or DEQ to undertake any criminal enforcement activity against the permittee or any person.
- c. Nothing herein shall be construed to limit the authority of EPA or DEQ to undertake any actions in response to conditions which present an imminent and substantial endangerment to public health or welfare, or the environment.
- d. Nothing herein shall be construed to limit the permittee's rights to administrative and judicial appeal of termination actions in accordance with 9 VAC 5 Chapter 170, Part VIII of the State Air Pollution Control Board Regulations for the Control and Abatement of Air Pollution.

(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 10 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

137. Transfer of Ownership

- a. The terms of the PSD permit are transferable to a new owner upon sale of the site.
- b. In the event of any change in ownership or control of the site, the permittee shall notify the project stakeholders in writing no later than 10 days after the change. The notification shall include the name, address, telephone number of the transferee in interest, and the date of the transfer.
- c. For the first 12 months after change in ownership or control of the site, the new owner shall submit the monthly 12-month rolling total of criteria pollutant emissions to the project signatories, in the same manner as specified in Condition 6.
- d. Within 12 months of the change in ownership or control of the site, the PSD permit shall be reviewed as specified in Conditions 131 and 132. Such review shall also include an affirmative renewal of the PSD permit by the project signatories. Affirmative renewal means that the PSD permit shall continue to be in effect if all project signatories (excluding the former permittee and including the new owner/operator) agree that the PSD permit should continue; otherwise, the PSD permit shall be terminated as specified in Condition 134.d.

(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 11 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

138. Definitions for Terms in the PSD Permit

- a. 12-Month Rolling Total: The 12-month rolling total for an individual pollutant or the total of Condition 1.a pollutants is calculated on a monthly basis as the sum of all actual emissions of the respective pollutant(s) from the previous 12 months.
- b. Completion of Powerhouse Conversion: The date upon which the new boilers are operational. This determination shall be made by the permittee based on the boiler manufacturer's installation, startup, and shakedown specifications.
- c. Compliance Date: The date upon which the site is required to take action in order to comply with a new regulation or a regulation to which it is newly subject.
- d. Criteria Pollutant Regulation: A regulation promulgated under the Clean Air Act Title I or Virginia Air Pollution Control Law covering only those pollutants listed in Condition 1.a of this permit.
- e. HAP Regulation: A state or federal regulation promulgated under the Clean Air Act Title III.

- f. Highest Emission Point (HEP): The highest 12-month rolling total of criteria pollutant emissions from the site since July 12, 2001.
- g. Process Unit:
 - (1) Manufacturing equipment assembled to produce a single intermediate or final product, or
 - (2) Any combustion device.
- h. Project Stakeholders: Employees of the project signatories to the Final Project Agreement, plus other parties as follows:
 - (1) Up to three other community representatives shall be included as nominated by the Rockingham County Board of Supervisors, and agreed to by full consent of the project signatories to the Final Project Agreement. Community representatives are defined as local government and/or community residents with an ongoing stake in the project, and
 - (2) Up to one representative from a regional public interest group shall be included as nominated by any project signatory and agreed to by full consent of the project signatories.
- i. PSD Permit: The PSD permit issued on January 7, 1998, with an effective date of February 10, 1998, administratively modified August 8, 2001, and modified 9/18/2006, and administratively modified 4/21/2011.
- j. Responsible Official:
 - (1) The president, secretary, treasurer, or vice-president of the business entity in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the business entity; or,
 - (2) A duly authorized representative of such business entity if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to a permit and either:
 - (a) The facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), or
 - (b) The authority to sign documents has been assigned or delegated to such representative in accordance with procedures of the business entity.

- k. Signatories to the Final Project Agreement or project signatories: The EPA, the DEQ, the Department of the Interior Federal Land Manager (FLM), the Rockingham County Board of Supervisors, and Merck Sharp & Dohme Corporation. All correspondence required by the PSD permit shall be directed to the individual representatives for each of these project signatories listed in Table VIII. This table may be revised upon written notification to the project signatories.

Table VIII. Individual Signatory Representatives.

Title	Affiliation	Address	Telephone
Director, Air Radiation and Toxics Division	EPA Region III	(3AT00) 1650 Arch Street Philadelphia, PA 19107	215-566-2050
Regional Director	Valley Regional Office VA Department of Environmental Quality	4411 Early Road P.O. Box 3000 Harrisonburg, VA 22801	540-574-7800
Chief, Air Resources Division	National Park Service	P. O. Box 25287 Denver, CO 80225	303-969-2074
Chairman	Rockingham County Board of Supervisors	P. O. Box 1252 Harrisonburg, VA 22801	540-433-5626
Director, Safety and Environment	Safety and Environment Merck Sharp & Dohme Corporation	2778 South East Side Hwy Elkton, VA 22827-0007	540-298-4046

- l. Site: The contiguous property at Route 340 South, Elkton, Virginia, under common control by Merck Sharp & Dohme Corporation, and its successors in ownership, known as the Elkton plant.

(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 12 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

Insignificant Emission Units

139. **Insignificant Emission Units** - The following emission units at the facility are identified in the application as insignificant emission units under 9 VAC 5-80-720:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)
See Attachment B			

These emission units are presumed to be in compliance with all requirements of the federal Clean Air Act as may apply. Based on this presumption, no monitoring, recordkeeping, or reporting shall be required for these emission units in accordance with 9 VAC 5-80-110.

Compliance With State and Federal Regulations and Air Permits Under PSD (Project XL) Permit

The PSD permit allows the permittee to construct or modify emission units at the site. Any such permitted activities would not be subject to any further PSD, NSR, or minor NSR preconstruction requirements for the pollutants as specified in Conditions 141 and 142.a.

140. **Powerhouse Conversion: Regulatory Compliance for the Powerhouse** – Compliance with the PSD permit shall be deemed to be compliance with all requirements of 40 CFR 60 Subpart Db (40 CFR 60.40b et seq.) and 9 VAC 5 Chapter 50, Part II, Article 5 (9 VAC 5-50-400 et seq.).
(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, 40 CFR 60.49b(u) and Section 2 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)
141. **Major New Source Review (NSR) Permitting and Registration** – Compliance with the PSD permit shall be deemed to satisfy all requirements of the major NSR permitting and registration regulations (40 CFR 52.21, 40 CFR 52.2420 as it pertains to major NSR permitting and registration, and VA Air Regulations 9 VAC 5 Chapter 50, Part II, Article 4 (9 VAC 5-50-240 et seq.), 9 VAC 5 Chapter 80, Part II, Article 8 (9 VAC 5-80-1605 et seq., replaces 9 VAC 5-80-1700 et seq.), 9 VAC 5 Chapter 80, Part II, Article 9 (9 VAC 5-80-2000 et seq., replaces 9 VAC 5-80-30), and 9 VAC 5-20-160) for pollutants listed in Condition 1.a and particulate matter (PM), but not for particulate matter regulated as PM-2.5.
(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 3 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)
142. **Other Regulations for which the PSD permit constitutes Compliance** – Compliance with the PSD permit shall be deemed to satisfy all requirements of the following regulations for all pollutants except lead, except particulate matter regulated as PM-2.5, and except any new criteria pollutants listed by EPA in 40 CFR 52.21(b)(23)(i) after January 7, 1998:
 - a. **Minor NSR Permitting and Registration**
40 CFR 52.2420 as it pertains to minor NSR permitting and registration, and VA Air Regulations 9 VAC 5 Chapter 50, Part II, Article 4 (9 VAC 5-50-240 et seq.), 9 VAC 5 Chapter 80, Part II, Article 6 (9 VAC 5-80-110 et seq.) (replaces 9 VAC 5-80-10 and 9 VAC 5-80-11), and 9 VAC 5-20-160.
 - b. **Standards of Performance for Stationary Sources**
VA Air Regulations 9 VAC 5 Chapter 50, Part II, Article 4 (9 VAC 5-50-240 et seq.), and 40 CFR 52.2420, as it pertains to 9 VAC 5-50-240 et seq., standards of performance for stationary sources
 - c. **Virginia Air Toxics Rule**

VA Air Regulations 9 VAC 5 Chapter 60, Articles 4 and 5 (9 VAC 5-60-200 et seq. and 9 VAC 5-60-300 et seq.) (formerly 9 VAC 5 Chapter 40, Part II, Article 3 (9 VAC 5-40-160 et seq.) and 9 VAC 5 Chapter 50, Part II, Article 3 (9 VAC 5-50-160 et seq.))

d. Notification, Records, and Reporting

VA Air Regulations 9 VAC 5-40-50 and 9 VAC 5-50-50, and 40 CFR 52.2420 as it pertains to 9 VAC 5-40-50 and 9 VAC 5-50-50, notification, records, and reporting

e. Emission Standards for General Process Operations, Incinerators, and Fuel Burning Equipment

VA Air Regulations 9 VAC 5 Chapter 40, Part II, Article 4 (9 VAC 5-40-240 et seq.); 9 VAC 5 Chapter 40, Part II, Article 7 (9 VAC 5-40-730 et seq.); and, 9 VAC 5 Chapter 40, Part II, Article 8 (9 VAC 5-40-880 et seq.), and 40 CFR 52.2420, as it pertains to VA Air Regulations 9 VAC 5 Chapter 40, Part II, Article 4; 9 VAC 5 Chapter 40, Part II, Article 7; and, 9 VAC 5 Chapter 40, Part II, Article 8, Emission Standards for General Process Operations, Incinerators, and Fuel Burning Equipment

f. Compliance and Monitoring

VA Air Regulations 9 VAC 5-40-20, 9 VAC 5-40-21, 9 VAC 5-40-22, 9 VAC 5-40-40, 9 VAC 5-40-41 and 9 VAC 5-50-40, and 40 CFR 52.2420, as it pertains to 9 VAC 5-40-20, 9 VAC 5-40-21, 9 VAC 5-40-22, 9 VAC 5-40-40, 9 VAC 5-40-41 and 9 VAC 5-50-40, compliance and monitoring

g. RCRA Organic Air Emissions Standards

40 CFR 264 Subparts AA and BB (40 CFR 264.1030 et seq. and 264.1050 et seq.), and 40 CFR 265 Subparts AA and BB (40 CFR 265.1030 et seq. and 265.1050 et seq.)

(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 3 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

143. Regulations for which the PSD Permit Constitutes Compliance for Certain Provisions

– Compliance with the PSD permit shall be deemed to satisfy certain requirements of the following regulations for all pollutants, except lead, except particulate matter regulated as PM-2.5, and except for any new criteria pollutants listed by EPA in 40 CFR 52.21(b)(23)(i) after January 7, 1998. The permittee shall continue to comply with other sections of these rules as specified in the regulations. These regulations and the portions for which the PSD permit constitutes compliance are specified below.

a. Standards of Performance for New Stationary Sources (NSPS)

The PSD permit constitutes compliance with 40 CFR 60 Subpart Kb (40 CFR 60.110b et seq.), 40 CFR 60 Subpart A (40 CFR 60.1 et seq.), VA Air Regulations 9 VAC 5 Chapter 50, Part II, Article 5 (9 VAC 5-50-400 et seq.), and 40 CFR 52.2420 as it pertains to VA Air Regulations 9 VAC 5 Chapter 50, Part II, Article 5, for new and existing bulk volatile organic liquid storage vessels (including petroleum liquid storage vessels) that would otherwise only be subject to notification, recordkeeping, and reporting requirements.

b. Title V Permitting

(1) Monitoring requirements: Monitoring requirements specified in Condition 6 of this permit shall constitute compliance with any applicable monitoring requirements in 40 CFR 71.6(a)(3) and 9 VAC 5-80-110 E that would be applicable to the provisions of the PSD permit.

(2) Recordkeeping and Reporting Requirements: Recordkeeping and reporting requirements specified in Condition 6 of this permit shall constitute compliance with recordkeeping and reporting requirements that would be applicable to provisions of the PSD permit in 40 CFR 71.6(a)(3)(ii), 40 CFR 71.6(a)(3)(iii)(A), 9 VAC 5-80-110.F.1, and 9 VAC 5-80-110.F.2.a

c. CERCLA and EPCRA Emergency Release Reporting (40 CFR 302 and 40 CFR 355.40)

Emissions in compliance with the PSD permit are “federally permitted releases” for purposes of release reporting under Section 103(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and Section 304 of the Emergency Planning and Community Right-to-Know Act (EPCRA)

d. Facility and control equipment maintenance or malfunction compliance

VA Air Regulations 9 VAC 5-20-180 and 9 VAC 5-50-20, and 40 CFR 52.2420 as it pertains to 9 VAC 5-20-180 and 9 VAC 5-50-20, Facility and Control Equipment Maintenance or Malfunction Compliance (except for visible emissions and odor)

e. Control Programs

VA Air Regulations 9 VAC 5-20-170, and 40 CFR 52.2420 as it pertains to 9 VAC 5-20-170, Control Programs (except for visible emissions and odor)

f. Compliance, Monitoring, and Performance Testing

VA Air Regulations 9 VAC 5-40-30, 9 VAC 5-50-30, and 40 CFR 52.2420 as it pertains to 9 VAC 5-40-30 and 9 VAC 5-50-30, Compliance, Monitoring and, Performance Testing (all except 9 VAC 5-40-30B and 9 VAC 5-50-30B, which subject emission testing to approved guidelines)

g. RCRA Organic Air Emissions Standards for Tanks and Containers

40 CFR 264 Subpart CC (40 CFR 264.1080 et seq.), and 40 CFR 265 Subpart CC (40 CFR 265.1080 et seq.), except for provisions applicable to surface impoundments

(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 3 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

144. Compliance with the terms of the PSD permit shall not relieve the permittee of its obligation to comply with applicable local, State, or Federal laws and regulations not addressed in Conditions 140 through 143 of this permit.

(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 3 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

145. Violation of a term of the PSD permit shall not constitute a violation of regulations listed in Conditions 140 through 143 of this permit for which the permit constitutes compliance.

(9 VAC 5-80-110, 9 VAC 5 Chapter 190, 40 CFR 52.2454, and Section 3 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)

Permit Shield & Inapplicable Requirements

146. **Permit Shield and Inapplicable Requirements** - Compliance with the provisions of this permit shall be deemed compliance with all applicable requirements in effect as of the permit issuance date as identified in this permit. This permit shield covers only those applicable requirements covered by terms and conditions in this permit and the following requirements which have been specifically identified as being not applicable to this permitted facility:

Citation	Title of Citation	Description of Applicability
40 CFR 60 Subpart III (9 VAC 5-50-410, Subpart III)	Volatile Organic Compound (VOC) Emissions from the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes	Applicable to air oxidation unit processes manufacturing regulated (listed) chemicals; Elkton Plant does not operate an air oxidation unit process
40 CFR 60 Subpart RRR (9 VAC 5-50-410, Subpart RRR)	VOC Emissions from SOCMI Reactor Processes	Applicable to specified reactor processes manufacturing regulated (listed) chemicals; Elkton Plant does not operate the affected reactor processes (rule exempts any reactor process designed and operated as a batch operation)
40 CFR 60 Subpart VV (9 VAC 5-50-410, Subpart VV)	Equipment Leaks of VOC in the SOCMI	Applicable to SOCMI facilities that produce one or more chemicals listed in 40 CFR 60.489; Elkton Plant does not produce listed chemicals
40 CFR 60 Subpart NNN (9 VAC 5-50-410, Subpart NNN)	VOC Emissions from SOCMI Distillation Operations	Applicable to SOCMI facilities that produce one or more chemicals listed in 40 CFR 60.489; Elkton Plant does not produce listed chemicals
40 CFR 60 Subpart YYY (9 VAC 5-50-410, Subpart YYY)	VOC Emissions from SOCMI Wastewater Operations	Applicable to SOCMI facilities that produce one or more chemicals listed in 40 CFR 60.489; Elkton Plant does not produce listed chemicals
40 CFR 63 Subpart GGGGG	National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Site Remediation	The site remediation activities qualifies for the exemption at 40 CFR 63.7881 (b)(3); it is a site remediation performed under a RCRA corrective action required by a permit issued by a State program authorized by EPA under RCRA section 3006.

40 CFR 63 Subpart HHHHHH	NESHAP for Paint Stripping and Miscellaneous Surface Coating Operations	Elkton Plant does not engage in activities that are subject to Subpart HHHHHH
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Nothing in this permit shield shall alter the provisions of §303 of the federal Clean Air Act, including the authority of the administrator under that section, the liability of the owner for any violation of applicable requirements prior to or at the time of permit issuance, or the ability to obtain information by (i) the administrator pursuant to §114 of the federal Clean Air Act, (ii) the Board pursuant to §10.1-1314 or §10.1-1315 of the Virginia Air Pollution Control Law or (iii) the Department pursuant to §10.1-1307.3 of the Virginia Air Pollution Control Law.

(9 VAC 5-80-140)

General Conditions

147. **General Conditions: Federal Enforceability** – All terms and conditions in this permit are enforceable by the administrator and citizens under the federal Clean Air Act, except those that have been designated as only state-enforceable.
(9 VAC 5-80-110 N)
148. **General Conditions: Permit Expiration** – This permit has a fixed term of five years. The expiration date shall be the date five years from the date of issuance. Unless a timely and complete renewal application consistent with 9 VAC 5-80-80 has been submitted, to the Department, by the owner, the right of the facility to operate shall be terminated upon permit expiration.
(9 VAC 5-80-80 B, C and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)
149. **General Conditions: Permit Expiration** – The owner shall submit an application for renewal at least six months but no earlier than eighteen months prior to the date of permit expiration.
(9 VAC 5-80-80 B, C and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)
150. **General Conditions: Permit Expiration** – If an applicant submits a timely and complete application for an initial permit or renewal under this section, the failure of the source to have a permit or the operation of the source without a permit shall not be a violation of Article 1, Part II of 9 VAC 5 Chapter 80, until the Board takes final action on the application under 9 VAC 5-80-150.
(9 VAC 5-80-80 B, C and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)
151. **General Conditions: Permit Expiration** – No source shall operate after the time that it is required to submit a timely and complete application under subsections C and D of 9 VAC 5-80-80 for a renewal permit, except in compliance with a permit issued under Article 1, Part II of 9 VAC 5 Chapter 80.
(9 VAC 5-80-80 B, C and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)
152. **General Conditions: Permit Expiration** – If an applicant submits a timely and complete application under section 9 VAC 5-80-80 for a permit renewal but the Board fails to issue or deny the renewal permit before the end of the term of the previous permit, (i) the previous permit shall not expire until the renewal permit has been issued or denied and (ii) all the terms and conditions of the previous permit, including any permit shield granted pursuant to 9 VAC 5-80-140, shall remain in effect from the date the application is determined to be complete until the renewal permit is issued or denied.
(9 VAC 5-80-80 B, C and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)
153. **General Conditions: Permit Expiration** – The protection under subsections F 1 and F 5 (ii) of section 9 VAC 5-80-80 F shall cease to apply if, subsequent to the completeness determination made pursuant section 9 VAC 5-80-80 D, the applicant fails to submit by the deadline specified in writing by the Board any additional information identified as being needed to process the application.
(9 VAC 5-80-80 B, C and F, 9 VAC 5-80-110 D and 9 VAC 5-80-170 B)

154. **General Conditions: Annual Compliance Certification** – Exclusive of any reporting required to assure compliance with the terms and conditions of this permit or as part of a schedule of compliance contained in this permit, the permittee shall submit to EPA and DEQ no later than **May 1** each calendar year a certification of compliance with all terms and conditions of this permit including emission limitation standards or work practices. The compliance certification shall comply with such additional requirements that may be specified pursuant to §114(a)(3) and §504(b) of the federal Clean Air Act. This certification shall be signed by a responsible official, consistent with 9 VAC 5-80-80 G, and shall include:
- a. The time period included in the certification. The time period to be addressed is January 1 to December 31.
 - b. The identification of each term or condition of the permit that is the basis of the certification.
 - c. The compliance status.
 - d. Whether compliance was continuous or intermittent, and if not continuous, documentation of each incident of non-compliance.
 - e. Consistent with Condition 6, 125, 126, 127, 128, and 129, of this permit, the method or methods used for determining the compliance status of the source at the time of certification and over the reporting period.
 - f. Such other facts as the permit may require to determine the compliance status of the source.
 - g. One copy of the annual compliance certification shall be sent to EPA at the following address:

[R3 APD Permits@epa.gov](mailto:R3_APD_Permits@epa.gov).

(9 VAC 5-80-110 K.5)

155. **General Conditions: Permit Deviation Reporting** – The permittee shall notify the Director, Valley Region, within four daytime business hours after discovery of any deviations from permit requirements which may cause excess emissions for more than one hour, including those attributable to upset conditions as may be defined in this permit. In addition, within 14 days of the discovery, the permittee shall provide a written statement explaining the problem, any corrective actions or preventative measures taken, and the estimated duration of the permit deviation. The occurrence should also be reported in the next annual compliance monitoring report pursuant to General Condition 154 of this permit.

(9 VAC 5-80-110 F.2 and 9 VAC 5-80-250)

156. **General Conditions: Failure/Malfunction Reporting** – If, for any reason, the affected facilities or related air pollution control equipment fails or malfunctions and may cause excess visible emissions for more than one hour, the owner shall notify the DEQ, within four daytime business hours of discovery of the occurrence. In addition, the owner shall provide a written statement, within 14 days of discovery of the occurrence, explaining the problem, corrective action taken, and the estimated duration of the breakdown/shutdown. (9 VAC 5-20-180 C and Section 3.4.4 of 2/10/1998 Permit, administratively modified 8/8/2001, modified 9/18/2006, administratively modified 4/21/2011, and administratively modified 3/16/2016)
157. **General Conditions: Severability** – The terms of this permit are severable. If any condition, requirement or portion of the permit is held invalid or inapplicable under any circumstance, such invalidity or inapplicability shall not affect or impair the remaining conditions, requirements, or portions of the permit. (9 VAC 5-80-110 G.1)
158. **General Conditions: Duty to Comply** – The permittee shall comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the federal Clean Air Act or the Virginia Air Pollution Control Law or both and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or, for denial of a permit renewal application. (9 VAC 5-80-110 G.2)
159. **General Conditions: Need to Halt or Reduce Activity not a Defense** – It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. (9 VAC 5-80-110 G.3)
160. **General Conditions: Permit Action for Cause** – This permit may be modified, revoked, reopened, and reissued, or terminated for cause as specified in 9 VAC 5-80-110 L, 9 VAC 5-80-240 and 9 VAC 5-80-260. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. (9 VAC 5-80-110 G.4)
161. **General Conditions: Property Rights** – The permit does not convey any property rights of any sort, or any exclusive privilege. (9 VAC 5-80-110 G.5)

162. **General Conditions: Duty to Submit Information** – The permittee shall furnish to the Board, within a reasonable time, any information that the Board may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Board copies of records required to be kept by the permit and, for information claimed to be confidential, the permittee shall furnish such records to the Board along with a claim of confidentiality.
(9 VAC 5-80-110 G.6)
163. **General Conditions: Duty to Submit Information** – Any document (including reports) required in a permit condition to be submitted to the Board shall contain a certification by a responsible official that meets the requirements of 9 VAC 5-80-80 G.
(9 VAC 5-80-110 K.1)
164. **General Conditions: Duty to Pay Permit Fees** – The owner of any source for which a permit under 9 VAC 5-80-50 through 9 VAC 5-80-300 was issued shall pay permit fees consistent with the requirements of 9 VAC 5-80-310 through 9 VAC 5-80-350. The actual emissions covered by the permit program fees for the preceding year shall be calculated by the owner and submitted to the Department by **April 15** of each year. The calculations and final amount of emissions are subject to verification and final determination by the Department.
(9 VAC 5-80-110 H and 9 VAC 5-80-340 C)
165. **General Conditions: Fugitive Dust Emission Standards** – During the operation of a stationary source or any other building, structure, facility, or installation, no owner or other person shall cause or permit any materials or property to be handled, transported, stored, used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions may include, but are not limited to, the following:
- a. Use, where possible, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land;
 - b. Application of asphalt, water, or suitable chemicals on dirt roads, materials stockpiles, and other surfaces which may create airborne dust; the paving of roadways and the maintaining of them in a clean condition;
 - c. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty material. Adequate containment methods shall be employed during sandblasting or other similar operations;
 - d. Open equipment for conveying or transporting material likely to create objectionable air pollution when airborne shall be covered or treated in an equally effective manner at all times when in motion; and,

- e. The prompt removal of spilled or tracked dirt or other materials from paved streets and of dried sediments resulting from soil erosion.

(9 VAC 5-40-90 and 9 VAC 5-50-90)

166. **General Conditions: Alternative Operating Scenarios** – Contemporaneously with making a change between reasonably anticipated operating scenarios identified in this permit, the permittee shall record in a log at the permitted facility a record of the scenario under which it is operating. The permit shield described in 9 VAC 5-80-140 shall extend to all terms and conditions under each such operating scenario. The terms and conditions of each such alternative scenario shall meet all applicable requirements including the requirements of 9 VAC 5 Chapter 80, Article 1.
(9 VAC 5-80-110 J)

167. **General Conditions: Reopening For Cause** – The permit shall be reopened by the Board if additional federal requirements become applicable to a major source with a remaining permit term of three years or more. Such reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended pursuant to 9 VAC 5-80-80 F.

- a. The permit shall be reopened if the Board or the administrator determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.
- b. The permit shall be reopened if the administrator or the Board determines that the permit must be revised or revoked to assure compliance with the applicable requirements.
- c. The permit shall not be reopened by the Board if additional applicable state requirements become applicable to a major source prior to the expiration date established under 9 VAC 5-80-110 D.

(9 VAC 5-80-110 L)

168. **General Conditions: Permit Availability** – Within five days after receipt of the issued permit, the permittee shall maintain the permit on the premises for which the permit has been issued and shall make the permit immediately available to DEQ upon request.
(9 VAC 5-80-150 E)

169. **General Conditions: Transfer of Permits** – No person shall transfer a permit from one location to another, unless authorized under 9 VAC 5-80-130, or from one piece of equipment to another.
(9 VAC 5-80-160)

170. **General Conditions: Transfer of Permits** – In the case of a transfer of ownership of a stationary source, the new owner shall comply with any current permit issued to the previous owner. The new owner shall notify the Board of the change in ownership within 30 days of the transfer and shall comply with the requirements of 9 VAC 5-80-200.
(9 VAC 5-80-160)
171. **General Conditions: Transfer of Permits** – In the case of a name change of a stationary source, the owner shall comply with any current permit issued under the previous source name. The owner shall notify the Board of the change in source name within 30 days of the name change and shall comply with the requirements of 9 VAC 5-80-200.
(9 VAC 5-80-160)
172. **General Conditions: Permit Revocation or Termination for Cause** – A permit may be revoked or terminated prior to its expiration date if the owner knowingly makes material misstatements in the permit application or any amendments thereto or if the permittee violates, fails, neglects or refuses to comply with the terms or conditions of the permit, any applicable requirements, or the applicable provisions of 9 VAC 5 Chapter 80 Article 1. The Board may suspend, under such conditions and for such period of time as the Board may prescribe, any permit for any of the grounds for revocation or termination or for any other violations of these regulations.
(9 VAC 5-80-190 C and 5-80-260)
173. **General Conditions: Duty to Supplement or Correct Application** – Any applicant who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrections. An applicant shall also provide additional information as necessary to address any requirements that become applicable to the source after the date a complete application was filed but prior to release of a draft permit.
(9 VAC 5-80-80 E)
174. **General Conditions: Stratospheric Ozone Protection** – If the permittee handles or emits one or more Class I or II substances subject to a standard promulgated under or established by Title VI (Stratospheric Ozone Protection) of the federal Clean Air Act, the permittee shall comply with all applicable sections of 40 CFR Part 82, Subparts A to F.
(40 CFR Part 82, Subparts A-F)
175. **General Conditions: Asbestos Requirements** – The permittee shall comply with the requirements of National Emissions Standards for Hazardous Air Pollutants (40 CFR 61) Subpart M, National Emission Standards for Asbestos as it applies to the following: Standards for Demolition and Renovation (40 CFR 61.145), Standards for Insulating Materials (40 CFR 61.148), and Standards for Waste Disposal (40 CFR 61.150).
(9 VAC 5-60-70 and 9 VAC 5-80-110 A.1)

176. **General Conditions: Accidental Release Prevention** – If the permittee has more, or will have more than a threshold quantity of a regulated substance in a process, as determined by 40 CFR 68.115, the permittee shall comply with the requirements of 40 CFR Part 68.
(40 CFR Part 68)

Attachment A

Process / Emission Units Having Uncontrolled PM/PM-10 Emission Rates of Less Than Five Tons Per Year

<u>Factory 5</u>	<u>Factory 7*</u>	<u>Bldg. 5H*</u>	<u>Building 5</u>	<u>Factory 8*</u>	<u>Biologics* (HPV Ferm.)</u>	<u>Internal Combustion Engines</u>
TA-500	(Cilastatin)	(Cilastatin)	PSFF Vial Filling	TA-9700	FE-3110	CFP-1
TA-106	(Imipenem)	(Imipenem)	Vial Gleaning (VG-1)	ST-9600	FE-3210	M6-1
E-03	(E-Train)	(Sodium Bicarb)	Vial Gleaning (VG-2)	ST-9800	FE-3310	M10-1
E-04	(Sodium Bicarb)	(PFR)		FD-9900/VP-9950	TA-1130	M7-1
F-16	(PFR)	TA-0801	<u>Building 5A</u>	WS-9900	TA-1140	B5-1
F-17	WS-508	FD-0845/VP-0845-01	Antibiotic for PFR	GB-9605		PH-2
G-1	TA-800	MI-0902		EF-9075	(HPV Pure)*	F5-1
G-2	FD-845	HP-0902		TA-9754 / funnel	TA-7600	FP-1
G-3	DC-845	GB-0925		BT-9615	TA-7620	FP-2
G-4	VP-1075	Drums		FD-9980	TA-7640	SI-1
	VP-1075-1	PF-0603				GH-1
	VJ-472C	TA-0714			(Alum)*	GH-2(2)
	GB-860	GB-0735			TA-5165	PH-1
	VP-1040	TA-0750				CNG-1
	VP-1041	FD-0740/VP-0740			(DSI)*	CNG-2
	VP-1050	MI-0901			FE-5230	IG-1
	VP-1051	HP-0901			FE-5240	CB-15
	GB-760	GB-0915			CE-5300	CB-17
	GB-765				TA-5310	CB-21
	TA-714				TA-5320	CB-22
	GB-775				SK-5350	
	TA-734				SK-5360	
	GB-915				SK-5370	
	GB-925					
	PF-746					
	TA-725					
	Antibiotic blending (Exhaust fan 81-19)					
	F7 House Vacuum					
						<u>Utilities</u>
						LTE-125
						LTE-127
						Boiler #7
						and #8 (natural gas combustion)

Note: For factory areas marked with an asterisk (*), the insignificant emission units include all those listed but not limited to those listed. There are no significant process / emission units for PM /PM-10 for these designated factory areas.

The following emission units at the facility are identified in the application as insignificant emission units under 9 VAC 5-80-720:

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)
B-7	Natural gas combustion - boilers	9 VAC 5-80-720 B	PM/PM-10/PM2.5
B-8	Natural gas combustion - boilers	9 VAC 5-80-720 B	PM/PM-10/PM2.5
LTE-125	Low Temperature Economizer	9 VAC 5-80-720 B	PM/PM-10/PM2.5
LTE-127	Low Temperature Economizer	9 VAC 5-80-720 B	PM/PM-10/PM2.5
CFP-1	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
M6-1	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
M10-1	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
M7-1	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
B5-1	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
PH-2	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
F5-1	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
FP-1	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
FP-2	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
SI-1	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
GH-1	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
GH-2(2)	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
PH-1	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
CNG-1	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
CNG-2	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
IG-1	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
CB-15	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
CB-17	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
CB-21	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
CB-22	Internal Combustion Engine	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-500	Nutrient charges	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-106	Nutrient charges	9 VAC 5-80-720 B	PM/PM-10/PM2.5
WS-508	Subdivision booth	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-800	Non-sterile Cilastatin charge	9 VAC 5-80-720 B	PM/PM-10/PM2.5
FD-845	Batch Drying	9 VAC 5-80-720 B	PM/PM-10/PM2.5
DC-845	Batch Drying	9 VAC 5-80-720 B	PM/PM-10/PM2.5
VP-1075	Batch Drying	9 VAC 5-80-720 B	PM/PM-10/PM2.5
VP-1075-1	Batch Drying	9 VAC 5-80-720 B	PM/PM-10/PM2.5
VJ-472C	Batch Drying	9 VAC 5-80-720 B	PM/PM-10/PM2.5
GB-860	Product packaging	9 VAC 5-80-720 B	PM/PM-10/PM2.5
VP-1040	Batch drying (roughing phase)	9 VAC 5-80-720 B	PM/PM-10/PM2.5
VP-1041	Batch drying (final phase)	9 VAC 5-80-720 B	PM/PM-10/PM2.5

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)
VP-1050	Batch drying (roughing phase)	9 VAC 5-80-720 B	PM/PM-10/PM2.5
VP-1051	Batch drying (final phase)	9 VAC 5-80-720 B	PM/PM-10/PM2.5
GB-760	Product packaging	9 VAC 5-80-720 B	PM/PM-10/PM2.5
GB-765	Product packaging	9 VAC 5-80-720 B	PM/PM-10/PM2.5
GB-775	Sterile Imipenim seed charge	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-734	Imipenim	9 VAC 5-80-720 B	PM/PM-10/PM2.5
GB-915	Imipenem milling glovebox (used for charging to mill)	9 VAC 5-80-720 B	PM/PM-10/PM2.5
GB-925	Imipenem milling glovebox (used for packaging)	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-714	Non-sterile Imipenem charge	9 VAC 5-80-720 B	PM/PM-10/PM2.5
PF-746	PFR	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-725	Charge Cilastatin/Imipenem blended mixture for recovery	9 VAC 5-80-720 B	PM/PM-10/PM2.5
Antibiotic blending (Exhaust fan 81-19)	Powder consolidation	9 VAC 5-80-720 B	PM/PM-10/PM2.5
House Vac	F7 House Vacuum	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-0801	B-5H Primaxin	9 VAC 5-80-720 B	PM/PM-10/PM2.5
FD-0845	B-5H Primaxin	9 VAC 5-80-720 B	PM/PM-10/PM2.5
VP-0845-01	B-5H Primaxin	9 VAC 5-80-720 B	PM/PM-10/PM2.5
MI-0902	B-5H Primaxin	9 VAC 5-80-720 B	PM/PM-10/PM2.5
HP-0902	B-5H Primaxin	9 VAC 5-80-720 B	PM/PM-10/PM2.5
GB-0925	B-5H Primaxin	9 VAC 5-80-720 B	PM/PM-10/PM2.5
Drums	B-5H Primaxin	9 VAC 5-80-720 B	PM/PM-10/PM2.5
PF-0603	B-5H Primaxin	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-0714	B-5H Primaxin	9 VAC 5-80-720 B	PM/PM-10/PM2.5
GB-0735	B-5H Primaxin	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-0750	B-5H Primaxin	9 VAC 5-80-720 B	PM/PM-10/PM2.5
FD-0740/ VP-0740-01	B-5H Primaxin	9 VAC 5-80-720 B	PM/PM-10/PM2.5
MI-0901	B-5H Primaxin	9 VAC 5-80-720 B	PM/PM-10/PM2.5
HP-0901	B-5H Primaxin	9 VAC 5-80-720 B	PM/PM-10/PM2.5
GB-0915	B-5H Primaxin	9 VAC 5-80-720 B	PM/PM-10/PM2.5
PSFF	Vial Filling	9 VAC 5-80-720 B	PM/PM-10/PM2.5
VG-1	Vial Gleaning	9 VAC 5-80-720 B	PM/PM-10/PM2.5
VG-2	Vial Gleaning	9 VAC 5-80-720 B	PM/PM-10/PM2.5
B-5A	Antibiotic for PFR	9 VAC 5-80-720 B	PM/PM-10/PM2.5
E-03	Fermentation	9 VAC 5-80-720 B	VOC/PM/PM-10/PM2.5
E-04	Fermentation	9 VAC 5-80-720 B	VOC/PM/PM-10/PM2.5
F-16	Fermentation	9 VAC 5-80-720 B	VOC/PM/PM-10/PM2.5
F-17	Fermentation	9 VAC 5-80-720 B	VOC/PM/PM-10/PM2.5
G-1	Fermentation	9 VAC 5-80-720 B	VOC/PM/PM-10/PM2.5
G-2	Fermentation	9 VAC 5-80-720 B	VOC/PM/PM-10/PM2.5

Stationary RICE Groupings

MACT Group 1: Existing Emergency Compression Ignition Engines greater than 100 HP, but less than or equal to 500 HP

Ref. No.	Manufacturer and/or Description	Date Installed	Engine Size
GH-1	Onan Model 200 DGFC-4956976 (Guardhouse Emergency Generator)	2001	317 BHP

MACT Group 2: Existing Emergency Spark Ignition Engines less than or equal to 500 HP

Ref. No.	Manufacturer and/or Description	Date Installed	Engine Size
GH-2(2)	Onan Model GNAC-5619101 (formerly MK-991 LPG Generator) Radio Power Emergency Generator	2003	21.5 BHP
SI-1	Onan Model 45.0 EM-15R/11071J (Sanitary Back-up LP Gas Emergency Generator)	1977	85 HP
F5-1	Onan Emergency Generator Model 65 ENB Engine Model LSG-8751-6005-A (Fermentation Provox)	1993	106 BHP

MACT Group 3: Existing Non-Emergency Compression Ignition Engines less than or equal to 500 HP

Ref. No.	Manufacturer and/or Description	Date Installed	Engine Size
M6-1	Cummins Engine Co., Direct Drive Diesel Engine Model 6BT-5.9	1986	152 BHP
M7-1	Cummins Engine Co., Direct Drive Diesel Engine Model N855 P250	1971	250 BHP
M10-1	Cummins Engine Co., Direct Drive Diesel Engine Model 6BT-5.9	1985	152 BHP

MACT Group 4: Existing Emergency Compression Ignition Engines greater than 500 HP

Ref. No.	Manufacturer and/or Description	Date Installed	Engine Size
B5-1	Detroit Diesel Emergency Generator Model 71237305	1977	575 BHP
CFP-1	Caterpillar Model 3406TA	1996	575 BHP
FP-1	Clarke-Detroit Diesel: Model#DDFP-08FH (Firewater Emergency)	1999	575 BHP
FP-2	Clarke-Detroit Diesel: Model#DDFP-08FH (Firewater Emergency)	1999	575 BHP

MACT Group 5: Existing Non-Emergency Compression Ignition Engines greater than 500 HP

Ref. No.	Manufacturer and/or Description	Date Installed	Engine Size
PH-1	Detroit Diesel Corp. Model: 8163 7416	1993	1,232 HP

MACT Group 6: New Emergency Compression Ignition Engines less than or equal to 500 HP

Ref. No.	Manufacturer and/or Description	Date Installed	Engine Size
PH-2	Cummins Diesel Engine Model QSB4.5	8/21/2008	110 BHP
CB-15	Kubota Engine Family CKBXL02.2RCD, 2.2L	Installed 2017 (2012 Model Year)	32 HP
CB-17	Kubota Engine Family CKBXL02.2RCD, 2.2L	Installed 2017 (2012 Model Year)	32HP
CB-21	Kubota Engine Family CKBXL02.2RCD, 2.2L	Installed 2018 (2012 Model Year)	32HP
CB-22	Kubota Engine Family CKBXL02.2RCD, 2.2L	Installed 2018 (2012 Model Year)	32HP

MACT Group 7: New Non Emergency Spark Ignition Engines greater than 500 HP

Ref. No.	Manufacturer and/or Description	Date Installed	Engine Size
CNG-1	Cummins Natural Gas Generator Model QSK60G	2016	1469 HP

MACT Group 8: New Non Emergency Spark Ignition Engines greater than or equal to 100 HP, but less than 500 HP

Ref. No.	Manufacturer and/or Description	Date Installed	Engine Size
CNG-2	Cummins Natural Gas Generator Model QSK19G	2016	471 HP

MACT Group 9: New Emergency Spark Ignition Engines between 25 HP and 100 HP

Ref. No.	Manufacturer and/or Description	Date Installed	Engine Size
IG-1	Olympian Natural Gas Generator Model G35LG2	2015	54 HP

Merck Sharp & Dohme Corporation (Elkton Plant)
Permit Number VRO80524
Attachment B

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)
G-3	Fermentation	9 VAC 5-80-720 B	VOC/PM/PM-10/PM2.5
G-4	Fermentation	9 VAC 5-80-720 B	VOC/PM/PM-10/PM2.5
TA-9700	Charge sodium metabisulfite	9 VAC 5-80-720 B	PM/PM-10/PM2.5
ST-9600	Charge pure intermediate Charge phenyl boronic acid Charge OS1 intermediate Charge seed	9 VAC 5-80-720 B	PM/PM-10/PM2.5
ST-9800	Charge crude intermediate Charge proline Charge sodium acetate	9 VAC 5-80-720 B	PM/PM-10/PM2.5
FD-9900/VP-9950	Batch drying	9 VAC 5-80-720 B	PM/PM-10/PM2.5
WS-9900	Subdivide pure intermediate Subdivide phenyl boric acid Subdivide OS1 intermediate Subdivide samples Subdivide bulk API	9 VAC 5-80-720 B	PM/PM-10/PM2.5
GB-9605	Charge crude intermediate Charge proline Charge phenyl boronic acid Charge OS1 intermediate Charge seed	9 VAC 5-80-720 B	PM/PM-10/PM2.5
EF-9075	Subdivide silica Subdivide proline Subdivide sodium acetate Subdivide kromasil Subdivide sodium metabisulfate	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-9754/ funnel TA-9754	Charge silica	9 VAC 5-80-720 B	PM/PM-10/PM2.5
BT-9615	Charge triflic acid Charge 2N HCl	9 VAC 5-80-720 B	PM/PM-10/PM2.5*
FD-9980	Batch drying	9 VAC 5-80-720 B	PM/PM-10/PM2.5
FE-3110	Fermentation	9 VAC 5-80-720 B	VOC/PM/PM-10/PM2.5
FE-3210	Fermentation	9 VAC 5-80-720 B	VOC/PM/PM-10/PM2.5
FE-3310	Fermentation	9 VAC 5-80-720 B	VOC/PM/PM-10/PM2.5
TA-1130	Media Prep Tank	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-1140	Media Prep Tank	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-7600	HPV	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-7620	HPV	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-7640	HPV	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-5165	Alum	9 VAC 5-80-720 B	PM/PM-10/PM2.5
FE-5230	DSI	9 VAC 5-80-720 B	PM/PM-10/PM2.5
FE-5240	DSI	9 VAC 5-80-720 B	PM/PM-10/PM2.5
CE-5300	DSI	9 VAC 5-80-720 B	PM/PM-10/PM2.5

Emission Unit No.	Emission Unit Description	Citation	Pollutant(s) Emitted (9 VAC 5-80-720 B)
TA-5310	DSI	9 VAC 5-80-720 B	PM/PM-10/PM2.5
TA-5320	DSI	9 VAC 5-80-720 B	PM/PM-10/PM2.5
SK-5350	DSI	9 VAC 5-80-720 B	PM/PM-10/PM2.5
SK-5360	DSI	9 VAC 5-80-720 B	PM/PM-10/PM2.5
SK-5370	DSI	9 VAC 5-80-720 B	PM/PM-10/PM2.5

* Recognized as PM/PM-10 for purposes of visible emissions monitoring.